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WHAT'S REALLY WRONG WITH GENETIC ENHANCEMENT: A SECOND LOOK AT OUR POSTHUMAN FUTURE

DANIEL L. TOBEY

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ARTICLE

WHAT'S REALLY WRONG WITH GENETIC ENHANCEMENT: A SECOND LOOK AT OUR POSTHUMAN FUTURE

DANIEL L. TOBEY*

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WHAT'S REALLY WRONG WITH GENETIC ENHANCEMENT: A SECOND LOOK AT OUR POSTHUMAN FUTURE

DANIEL L. TOBEY

This Article presents the case against genetic enhancement. It begins with a critique of Fukuyama's highly publicized work on enhancement. It then reconstructs the case for regulation, arguing that enhancement will undermine the most basic and universal sources of meaning and well-being in human life. The Article pays special attention to the law and economics scholarship, holding that the economic method will not detect certain types of harm to the human genome. The essay concludes with a policy solution that will preserve the benefits of genetic therapy while avoiding the harms of genetic enhancement.

I. INTRODUCTION

Should we allow ourselves to enhance the human species genetically? Answering *no* is surprisingly difficult. Many of us who oppose enhancement, often passionately, cannot express a secular theory of what exactly is at stake. Lauren Slater tells the story of a roomful of doctors at a bioethics convention who were paralyzed by one speaker, a physician who wanted to offer his patients wings. Everyone felt that something was deeply wrong, yet no one could give a satisfying account of what it was.¹

Francis Fukuyama offers one explanation in his recent work, *Our Posthuman Future*. Fukuyama argues that genetic enhancement will undermine our system of human rights by disrupting the boundary that encloses all humans in a single group. Fukuyama concludes that we should limit genetic science to allow therapy but prohibit “enhancement” or non-therapeutic procedures.²

¹ Lauren Slater, *Dr. Daedalus*, HARPERS, July 2001, at 57. I use this story for its metaphorical value. The physician in question is a plastic surgeon who imagined a mechanical, not genetic, intervention. Genetic enhancement will, in the short run, be more concerned with improving present traits such as intelligence, personality, and strength, as I describe below. However, this anecdote captures quite lyrically the ambivalence towards biomedical enhancement and our difficulty articulating it.

² FRANCIS FUKUYAMA, *OUR POSTHUMAN FUTURE* (2003).

While Fukuyama should be applauded for bringing attention to the issue, I will argue that he has reached the right conclusion for the wrong reasons – and that a stronger foundation for these principles must be built. I will argue that Fukuyama's emphasis on the human boundary is problematic, and that his theory, even if true, still would not capture the full range of harms of genetic enhancement. The real issue, I will argue, is not a challenge to human boundaries and human rights, but rather to the most basic sources of meaning and well-being in human life, what I will later refer to and defend as the human essence. I will distinguish this perspective from Fukuyama's and show how it provides a stronger basis for legislating against genetic enhancement while allowing genetic therapy. I will also suggest a solution to the puzzle described above: genetic enhancement is difficult to indict, because it appears to advance the precise human values it ultimately erodes.

This essay pays special critical attention to the law and economics scholarship. Genetics has generated irrational fear in the law as well as public opinion, and the law and economics scholars have been vital in deflating much of the genetic hyperbole. Yet the goal of this essay is to give voice to a rational fear that is difficult to articulate, one that I believe will be underestimated by the influential law and economics school. The human essence is not easily quantified, and I will attempt to show that the economic methodology, in both its descriptive and normative form, will be incapable of describing the full harms of genetic enhancement.³ Yet it is precisely the existential nature of the claim that makes it both elusive and worth the effort.

II. THE POSSIBILITIES OF GENETIC ENHANCEMENT

Genetic modification is a shorthand way of saying that science may allow us to control and select certain (1) physical attributes and (2) internal qualities of mind and character. Genetic enhancement involves modifications for “non-therapeutic” or “non-medical” reasons. The distinction between therapy and enhancement is complex and a source of considerable debate. We will take up this issue at the end of the essay.

3 The terms *descriptive* and *normative* will appear frequently in this essay. As much will turn on them, I will define them here. *Descriptive* (also, *positive*) analysis seeks to build “a body of systematized knowledge concerning what is.” Normative analysis, by contrast, seeks to build “a body of systematized knowledge discussing criteria of what ought to be.” JOHN NEVILLE KEYNES, *THE SCOPE AND METHOD OF POLITICAL ECONOMY* 34-35, 46 (Macmillan and Co. 1891). This distinction, common in economics and philosophy, is often referred to as the difference between the *is* and the *ought*.

Genetic enhancement can potentially affect a broad range of features: everything from physical qualities such as height, weight, appearance, strength, and agility to behavioral qualities including intelligence, creativity, mood, personality, and passion. Currently, genetic screening is possible; physicians using *in vitro* fertilization can select for the presence or absence of known genetic traits prior to implantation, a process now used to prevent inheritance of genetic disease.⁴ What lies on the horizon is the question of genetic modification rather than simple screening: actually setting the palette of qualities one's child or even, potentially, one's self will possess (the former and the latter pose different ethical considerations, which we will consider later).

There is much debate over what will be possible and when. This essay will not address questions of technical possibility. Rather, I will present the idea of enhancement and consider its consequences. Ethical considerations are often postponed because technical accomplishment appears distant. As such, science proceeds incrementally, and small but cumulative changes may be accepted without a realization of the larger trends. At the same time, unexpected advances can place abilities ahead of ethical preparation. The result of both trends is to end up in a place we might not like, without a clear sense of how we let ourselves get there. This essay offers a prospective framework to guide the development of genetic science.

The benefits of enhancement are potentially vast. I will describe the most optimistic scenario, in order to grant enhancement its strongest case. In addition to new treatments for disease, genetic modification may allow us to decrease suffering in other ways. For example, to the extent that success and material well-being are due to talents and abilities, genetic enhancement may allow us to reduce the

4 For example, Preimplantation Genetic Diagnosis (PGD) is used today for parents at high risk of passing on genetic disease. PGD involves *in vitro* fertilization, followed by the implantation of only those embryos that lack the disease-causing genotype. Physicians have applied PGD to prevent inheritance of at least 50 genetic conditions, including early-onset Alzheimer's and some familial cancers. See Yury Verlinsky et al., *Preimplantation Diagnosis for Early-Onset Alzheimer Disease Caused by V717L Mutation*, 287 JAMA 1018 (2002). In theory, PGD could be used to screen for any trait, disease or otherwise, and debates are already forming at the margins. There are parents desiring sex selection for nonmedical reasons and, in anticipation of future research, debates over sexual orientation selection. As more and more non-disease traits, such as intelligence and athleticism, are understood genetically, the demand for enhancement is likely to increase. See e.g., The Ethics Committee of the American Society of Reproductive Medicine, *Sex Selection and Preimplantation Diagnosis*, 72 FERTIL STERIL 595-98 (1999); Udo Schuklenk et al., *The Ethics of Genetic Research on Sexual Orientation*, in ETHICAL ISSUES IN MODERN MEDICINE 522 (John D. Arras and Bonnie Steinbock eds., 5th ed. 1999).

“different and unequal faculties of acquiring property” that give rise to vast inequality.⁵ The gifts of athletic, intellectual, and creative ability, currently available only to the genetically lucky, may one day be more egalitarian in their distribution. On the societal level, efficiency and productivity would be increased as a function of enhanced human capital. And on the personal level, sources of confidence and happiness, such as height, weight, eye color, personality, and more may be within one’s control. We might even imagine an earth where Einsteins, Shakespeares, and Mozarts come around more often than once in several lifetimes. A number of scientists have already considered ways to imbue humans with abilities that are currently reserved to other species or even to the imagination, an act that would increase the possibilities of human life and the freedoms we have for self-expression and determination.⁶

Yet enhancement raises questions, too. Enhancement is in part a question of identity. What does it mean, for example, to have the ability to select qualities that are not currently a matter of choice? At the extremes, enhancement is also a question of boundaries. It implicates the mental and physical properties that separate humans from non-humans.

Finally, I should note that many of these issues are not confined to genetics. The frontiers of plastic surgery, pharmacology, neuroscience, and biotechnology raise many of the same questions. In fact, some forms of enhancement will be more easily achieved through these alternate routes. Thus, such methods are equally critical, and my analysis applies to them as well. However, genetics is the issue of the day, in its salience and familiarity; it provides a scaffold for the analysis of enhancement, and we will use it here as a starting point for discussion.

5 James Madison quoted in FUKUYAMA, *supra* note 2, at 149. Of course, plenty of theorists have also noted that genetic enhancement will be expensive, and if it is accessible only to the rich, genetic enhancement could lead to vastly increased inequality. Yet this is a question of the *application* of the technology and how we regulate it – not an inherent consequence of the technology itself. Therefore, if at the end of this essay the only harm of genetic enhancement in the reader’s mind is increased inequality, then one could argue that we should allow it but insure its accessibility across income groups. Since I will be arguing that there are *intrinsic* harms of genetic enhancement, however, I will argue instead for prohibition, not fair distribution.

6 See Slater, *supra* note 1, at 57.

III. HOW TO EVALUATE NORMATIVE ETHICAL THEORIES

Before we consider the moral theory set forward by Fukuyama, it is necessary to ask, how does one evaluate a moral theory? Immanuel Kant argued that morality would be self-executing; that is, any rational being who deliberated on moral questions would ultimately come to the same result (namely, his). Therefore, all rational beings should find themselves bound to that theory by mutual acceptance.⁷ Two hundred years and several thousand dissertations later, Kant's prediction on consensus has not played out exactly as hoped. Nevertheless, many recent philosophers have shared this view that consensus can provide a positive test for ethical theories: in some way, by the faculties of intuition or reasonableness, we will know the correct moral philosophy when we see it.

And yet consensus remains elusive. Habermas, who is often credited with rescuing the enlightenment notion of objective moral theory from its postmodern critics, has argued that the best we can hope for is consensus among small communities bound by shared social lives – little islands of enlightenment objectivity floating in a sea of relativism.⁸ However, to many minds, this is a bit like gaining consensus by counting only those votes that agree with you.

Richard Posner offers an alternative method for evaluating moral theories. Posner argues that we cannot devise a positive test to prove moral theories, because moral theories, unlike scientific ideas, cannot be tested empirically. Therefore, Posner concludes that a negative test is the best we can hope for. While we cannot positively determine a “best” moral theory, we can screen out unacceptable ones.

Posner writes: “an ethical theory cannot really be validated but...it can be rejected on one of three grounds.”⁹ These grounds are (1) that the theory fails to satisfy basic logical requirements of consistency, completeness, and the like, (2) that it produces moral answers contrary to “widely shared ethical intuitions,” or (3) that any

⁷ Kant wrote that a rational being will follow the moral imperatives only if they are generated via the individual's reason: “It must regard itself as the author of its principles independently of alien influences.” IMMANUEL KANT, *GROUNDWORK FOR THE METAPHYSICS OF MORALS* 65 (Yale University Press 2002) (1785).

⁸ See, e.g., JURGEN HABERMAS, *THE THEORY OF COMMUNICATIVE ACTION* VOLUME 2 126 (Thomas McCarthy trans. 1987).

⁹ Richard Posner, *Utilitarianism, Economics, and Legal Theory*, 8 J. LEGAL STUD. 103, 111.

society following the theory would fail in competition with societies following other theories.¹⁰

What do we think of these criteria? Posner notes that factor (3) is “very controversial,” though in the present article he does not elaborate. No doubt, the controversy is partly because this factor equates the value of a moral theory with its Darwinian fitness: how would a society following such a theory do in competition with other societies? I do not wish to argue that Darwinian fitness is not a morally relevant value. I will remain agnostic on that point for now. What I will argue, however, is that by imposing this idea as an exogenous condition by which we accept or reject a moral theory, Posner has effectively removed the condition itself from moral evaluation. It becomes a rule of the game rather than one of the pieces in play. How can we evaluate the morality of Darwinian fitness as compared to other values if we are told that Darwinian fitness is a threshold condition by which we can reject a moral theory all together?

Of course, the same can be said of any threshold condition. However, what makes this particular threshold condition suspect is that many values are in direct conflict with competitive advantage, and yet many individuals would, using their “widely shared ethical intuition,” argue that the anti-competitive values are ethically superior. The liar may excel in business and drive others out of work. The ruthless law firm may succeed over the timid or *pro bono* oriented. The doctor who treats only rich patients and rejects the poor will earn more money and run a more competitive practice. The nation which is internally stable yet externally bellicose may appropriate the most geopolitical power. In all of these instances, many people would wish to consider these competitive advantages against other values. The doctor who treats only the rich may soon gain the competitive advantage, but we may not wish to dub him ethically superior. As I said, the point is not to argue that these competitive individuals are morally wrong or even to assess the moral worth of competitive advantage. The point is to argue that the controversy alone is enough to disqualify competitive advantage as a threshold condition and

¹⁰ In his own words, the three criteria upon which a theory may be rejected are “first, that the theory fails to meet certain basic formal requirements of adequacy, such as logical consistency, completeness, definiteness, and the like; second, that the theory yields precepts sharply contrary to widely shared ethical intuitions – precepts such as that murder is in general a good thing or that a sheep is normally entitled to as much consideration as a man; or third, that a society which adopted the theory would not survive in competition with societies following competing theories.” *Id.*

relegate it to its proper place, as one value among many to be judged and balanced by the ethical theory.¹¹

Posner would probably respond that I am making too much out of competitive advantage. The theory need not be the *most* competitive; it need only be able to meet the threshold condition of not going out of business. In other words, it must be able to exist indefinitely in equilibrium with other theories. If someone following a theory cannot survive, then it is not a valid theory, and perhaps that is all that Posner means by this factor. I have two responses. The first is that, if this is all that is meant by Factor (3), then we have reduced Factor (3) to a very thin version: a theory is invalid if following it means suicide. Note that even when I phrase it that way, in its thinnest form, it is not uncontestable. We could imagine situations in which moral action would *require* competitively suicidal action.¹²

The second response is that Factor (3), even in this thin form, contains an asymmetry. It is asymmetric to assume that if the theory fails, then it is the theory that was deficient. The other logical possibility is that the theory was indeed ethically superior, and it is the other, dominant theories that are to blame for out-competing the ethically superior theory (rather than adopting the ethically superior theory themselves). Recognizing this asymmetry requires uncoupling the ethical value and competitive value of the theory, which is, after all, the point of the argument. In other words, it is not hard to imagine that the ethically superior theory may die off in competition with unethical actors. That is the bind of morality: it does not always “pay off.” If it did, there would be nothing hard about being moral. Rather than rejecting the theory, however (which is the side of the asymmetry adopted by Posner), we might instead see an obligation to enforce conditions which allow that ethically superior theory to survive.

11 One may construct examples which say that “the liar always gets caught in the end,” so honest behavior is actually competitively superior. However, these can be answered with examples in which the savvy liar is not caught and the nice guy does indeed finish last. This becomes a battle of the anecdotes, and we are left with an empirical debate. Nevertheless, the mere fact that reasonable scenarios exist in which ethically superior behavior is anti-competitive is enough to disqualify competitiveness as a threshold condition.

12 The most extreme example is self-sacrifice. Some would argue that the sacrificing of one’s own life for another is a moral act, and yet its value, in terms of survival fitness, is zero. I would imagine that Posner’s response might be that moral theories should be evaluated not on the level of the individual, but on the societal level. As such, an act of self-sacrifice may have a fitness value of zero for the individual, but it may mean a great deal of fitness value for the society. Such a theory may be found in E.O. Wilson’s work on kin selection. The question of scale is a good one: on what level do you evaluate whether a theory passes factor (3)?

To demonstrate this point, let us apply an “ethical” analysis to the familiar Prisoner’s Dilemma scenario.¹³ Let us assume for this example that our widely shared ethical intuition is that Cooperation is the ethically superior strategy in the single-game Prisoner’s Dilemma. However, the familiar moral of the Prisoner’s Dilemma story is that in a single-game scenario, Cooperation is a dominated strategy and will not win in a competitive environment – unless there is an external enforcement mechanism which can coordinate the two players and ensure that they both cooperate when they say they will. By analogy to our discussion of Factor (3), the third party coordinator is the other side of the asymmetry that Posner’s factor does not explore. If a theory is ethically superior but dominated in a competitive environment, then perhaps the solution is for society to adopt mechanisms (criminal law, contracts, police) which coordinate ethical behavior and allow the ethically superior strategy to survive.

To take the analogy one step further, the Prisoner’s Dilemma has also been subjected to multiple-game interactions using a so-called genetic algorithm. A genetic algorithm (GA) is a computer program which simulates the conditions of evolution. To design a GA, you encode the rules of the game, and then you allow a number of different strategies to compete over several rounds. Strategies appear in the next round (“reproduce”) with a frequency proportionate to their “fitness,” which is a measure of how well the strategy performed in the previous round. In addition, these strategies will cross-breed and mutate, giving rise to spontaneous, new strategies. Under the Prisoner’s Dilemma conditions, it has been shown that one strategy will evolve over time as the superior strategy, and given enough iterations, it will out-perform all other strategies until it is the only one left. This strategy is known as Tit-for-Tat. In it, the first move is Cooperate (C), and from that point forward, it does whatever its opponent did in the previous round. The success of this strategy has been attributed to its punishment of bad

13 For those not familiar, the Prisoner’s Dilemma is a game theory scenario that has become widely popular due to the number of diverse, real-world scenarios for which it provides insight. In the game, we imagine two prisoners in different rooms. Each has a choice: he may cooperate with the other prisoner (C) by not talking, or he may defect (D) and rat out his fellow prisoner. If both players cooperate (C,C), they each get 3 points. If both defect, they each get 1. But if one cooperates while the other defects, the defector gets a good deal (say, 5 points), while the cooperator gets the boot (say, 0 points). The point which is commonly drawn from this scenario is that while everyone would have been better off had they cooperated, the rational strategy in a single-game scenario is to defect, because the costs of getting ratted out are too high. Therefore, no cooperation will occur in a single-game scenario unless there is an outside controller who can coordinate the two prisoner’s decisions and enforce their mutual cooperation. This model has proved useful in analyzing situations ranging from nuclear arms races to wearing protective gear in sports events. See ROBERT AXELROD, *THE EVOLUTION OF COOPERATION* (1984).

behavior (an opponent's Defection (D) in round n yields a D from Tit-for-Tat in round $n+1$), combined with its forgiving character (once the opponent switches back to C, Tit-for-Tat will follow suit in the next round).

From an ethical perspective, we might compare Tit-for-Tat to Hammurabi's Code: both encompass the idea of "an eye for an eye." We might imagine other strategies, like All-C (cooperate no matter what the opponent does), which relate more to the ethic of "turn the other cheek."

The point is not to argue which of these theories is ethically superior. The point is that, under Posner's Factor (3), *all ethical theories but one would be rejected out of hand at the threshold*. This is because, in the GA scenario (which simulates competitive equilibrium) only Tit-for-Tat survives in the absence of external, third-party coordination of players. By Posner's Factor (3), this apparently "solves" the question of morality for this scenario, though many individuals would object to both the inability to compare Tit-for-Tat to other ethical theories on their substantive merits and to the decision not to employ third-party external controls to allow other, perhaps ethically superior theories to survive.

Why spend so much time on such a technical issue? The answer is that Factor (3) has a great deal to say about genetic engineering, and in particular about genetic enhancement of the human species. Assume that in the next two centuries, genetic engineering will allow us to increase human intelligence, strength, and other competitive qualities. A society which disallows genetic enhancement will almost certainly fail over time in competition with societies that do allow enhancement.

Thus, if we accept Posner's Factor (3), it would likely be the case that an ethical theory that bans genetic enhancement is automatically rejectable. This is a vibrant example of the point I introduced at the beginning of this discussion: by making competitive value a threshold condition, we improperly remove from moral inspection actions like genetic enhancement, which may hold both tremendous competitive value and tremendous ethical implications. Accordingly, this is an issue I will return to later in the essay.

So what do we think of Factor (2)? Here, Posner says that we should reject a moral theory if "the theory yields precepts sharply contrary to widely shared ethical intuitions – precepts such as that murder is in general a good thing or that a sheep is normally entitled to as much consideration as a man."

Posner does not identify this criterion as controversial, as he did with Factor (3), but I believe it would have been appropriate to do so. Humans have been formulating theological moral theories for over four thousand years and secular ones for two thousand. And yet the majority of humans have only rejected slavery as a moral harm in the past one hundred or so years. In colonial America, a majority of citizens felt that slaves were subhuman and were undeserving of equal moral consideration. Only a small, enlightened minority felt otherwise. Therefore, according to Factor (2), if I proposed a moral theory in 1776 which rejected slavery, we would have to reject the theory, because it produced results “sharply contrary to widely shared ethical intuitions.” If I proposed the same theory today, it would pass Factor (2).

Was that anti-slavery ethical theory wrong then but right today? If we reject this result, then Factor (2) fails as a test, and we must discard it. However, suppose we accept this result, and say “yes, the anti-slavery ethical theory was wrong in 1776 but correct now because widely shared beliefs have changed.” Then we are left with a severely crippled notion of what a moral theory is. In this case, the cart would be leading the horse, and Factor (2) has reduced acceptable ethical theories to those which tell us only what we have already accepted and absorbed into intuition.¹⁴ Such a moral theory is of little use. It can, at best, help us reason by analogy to similar moral dilemmas: if we know A is morally wrong, and B is a matter of new inspection for which we have no intuition, then if we can say that B is the same as A, we can say that B is also wrong. Yet we did not need a theory to tell us this. And further, such a theory has two fundamental deficiencies. First, it lacks the *a priori*, intransigent nature which gives the traditional understanding of morality force. Second, it cannot lead us on moral issues, using the power of reason and logic to force society into uncomfortable moral advances that go against settled intuition (as most moral advances have traditionally done, from slavery to the de-subordination of women). Thus, a theory which states A can guide us on B, but it does not help at all for issue C, an issue where morality and the intuition of the moment conflict.

Similarly, there is also the question of scale in confronting Factor (2). How wide is “widely shared”? Do we mean widely shared among a family, a town, a state, a nation, or among all humans? Suppose the world is composed of two nations of equal size that differ on the moral question of X. One nation’s widely shared ethical intuition favors X, while the other nation’s intuition favors Not X.

¹⁴ This is the case with the examples Posner cites, such as ‘murder is good.’ There is no prize for a moral theory that tells a moral truth that has been stable for centuries.

Factor (2) does not allow us to adopt a theory that arbitrates between these two positions. Any theory that satisfies Factor (2) for one nation must fail it for the other. Whose widely shared ethical intuition do we favor? Or must we allow the two nations to hold inconsistent moral theories, thus opening the door to cultural relativism: child sacrifice is allowed in one nation and reviled in the other. This is the trap of intuitionism: intuition is contingent, relative, and culturally and historically determined. Now, of course the examples Posner gives us, (a) murder is good and (b) sheep should have equal rights to persons, might seem absurd in any era. But that is precisely the problem: a moral theory wins no points for telling us only what we already know. As Owen Fiss has written: "It is not the job of the oracle to tell people – whether it be persons on the street or critical moralists – what they already believe."¹⁵

Once again, while the discussion of Factor (2) may seem technical, it is critically relevant to genetic engineering. Returning to the paradox laid out at the beginning of the essay, intuition is the main popular method of rejecting genetic enhancement. We seem to have a sneaking suspicion that something is wrong with controlling many of our own features or those of our offspring. The question remains: is this visceral opinion on genetic engineering more like our centuries-long rejection of murder or our centuries-long acceptance of slavery? When intuition is sometimes very wrong, one wonders how Posner can use it as a threshold disqualifier of moral theories.

This is a particularly relevant question in bioethics, where intuitions change frequently and rapidly with new technologies. Some technologies that our intuitions initially reject (violently) can quickly become an accepted part of our moral intuition. For example, Leon Kass, who serves as chair of President Bush's bioethics committee, has said of *in vitro* fertilization: "Today, one must even apologize for voicing opinions that twenty-five years ago were nearly universally regarded as the core of our culture's wisdom on these matters."¹⁶ Often, our bioethical intuitions slide in the other direction, when a medical action is initially perceived as harmless but later garners moral repulsion. A famous example is the destigmatization of mental illness, which has led our intuitions to reject practices towards the mentally ill once considered perfectly permissible. Ironically, in an article on cloning, even Posner notes the slipperiness of intuition in bioethics – its lack of helpfulness as a guide:

¹⁵ Owen Fiss, *Groups and the Equal Protection Clause*, 5 PHIL. & PUB. AFF. READER 107, 150 (1976).

¹⁶ Leon R. Kass, *The Wisdom of Repugnance*, THE NEW REPUBLIC, June 2, 1997, at 17.

Nor do we attempt to factor into our analysis the sheer 'weirdness' of human cloning, a consideration that might be thought to depress the demand. Not only is this consideration analytically intractable, but it is probably only transitional. A product or service that is new and rare tends to be thought weird, and its diffusion is resisted. But if it is a source of potentially substantial net benefits, its use will spread, and when some critical mass is reached the aversion will drop away and a more rapid diffusion begin.¹⁷

Given that our initial intuitions often betray us relative to our later moral opinions (in both directions) – and that this is particularly the case in bioethics, where intuitions swing widely over short time periods – it seems that Posner's criteria of rejecting theories that conflict with our immediate intuitions may be unhelpful.

As I have said, I believe that our initial intuition on genetic enhancement is correct, and that genetic enhancement is something we will want to limit over the long run. However, I need something more than intuition to demonstrate this.

Where are we, then? If we reject Factors (2) and (3), or at least raise enough doubt to temporarily disable them as threshold bars, then we are left with Factor (1). But this is a low bar indeed. A theory need only meet basic formal logical criteria of completeness, definiteness, etc., and if it does so, we can say no more about it. In other words, all we can do is reject moral theories that do not make sense.

It is much easier to attack theories than to build new ones, and I do not have a solution to the ancient problem of evaluating normative theories. However, two important points come out of the discussion in this section. First, if I am to reject Fukuyama's theory, then it must be on the difficult bar set by Factor (1): i.e., demonstrating that the theory fails analytic soundness. Second, if I have succeeded in disabling Posner's other two factors, then I have gone a long way in preventing Posner and the law and economics school from prejudging the moral debate on genetic enhancement by packing their normative assumptions into the threshold criteria for theory-disqualification.

17 Eric A. Posner & Richard A. Posner, *The Demand for Human Cloning*, 27 HOFSTRA L. REV. 579, 580 (1999).

IV. THE HUMAN BOUNDARY: A CLOSER LOOK AT FUKUYAMA

In *Our Posthuman Future*, Fukuyama sets out to identify the dangers of genetic engineering. This is a difficult task for two reasons.

First, the worst case scenarios of genetic engineering often resemble science fiction visions of the future. As such, these consequences seem distant enough that people delay serious attention. In the interim, progress continues incrementally, which may reduce our ability to draw lines later. Second, the potential harms of genetic engineering are not of the kind that can be easily quantified and weighed against benefits. As such, they tend to be dismissed, reflexively, by law and economics theorists: i.e., how does one measure “loss of moral structure” or “diminution of meaning” in a cost-benefit analysis? The implicit assumption is that, if a factor does not fit into a wealth maximization calculus, then it is somehow not a serious factor. The irony of this position is that it is often the most important values that are least quantifiable.¹⁸

Therefore, Fukuyama should be applauded for taking on this important and difficult task. Nevertheless, I believe a stronger foundation can be laid for his conclusions, and we must consider the shortcomings of Fukuyama’s thesis in order to build this stronger case.

To understand Fukuyama’s position, I will divide his argument into five parts. First, Fukuyama defends a particular view of morality that suggests humans possess natural rights. Second, Fukuyama argues that these rights derive from something unique to humans, which he calls Factor X. As the basis of natural human rights, Factor X is something shared by all humans and lacked by all non-humans. Third, Fukuyama argues that genetic engineering threatens to undermine Factor X, which will in turn undermine our moral system of natural rights. Fourth, Fukuyama concludes that as a bioethical and legal principle, we must limit biotechnology when it threatens to undermine Factor X. Fifth, Fukuyama presents a number of bioethical proscriptions based on the above principle of safeguarding Factor X. Foremost among these, Fukuyama argues that we must codify the distinction between therapy and enhancement, allowing the former but not the latter.

18 The Law and Economics response to this statement is that all values, no matter how intangible, can be valued in the economic utility function. Gary Becker has built models quantifying, among other things, love and marriage. Later in this paper, I will return to this issue and take up the question of whether all values can be placed into a utility maximization calculation. See, e.g., GARY BECKER, *THE ECONOMIC APPROACH TO HUMAN BEHAVIOR* (1976).

These analytic steps provide the basis for Fukuyama's conclusion: "What is it that we want to protect from any future advances in biotechnology? The answer is, we want to protect the full range of our complex, evolved natures against attempts at self-modification. We do not want to disrupt either the unity or the continuity of human nature, and thereby the human rights that are based on it."¹⁹ In simpler terms, Fukuyama is concerned with preserving the boundary that circumscribes all humans into a single category, which he describes as the "unity" and "continuity" of human nature. Importantly, this boundary is not valuable *per se* to Fukuyama, at least not in his stated argument. Rather, the human boundary has instrumental value as the basis for human rights.

From the outset, this framework raises a number of questions. What is Factor X, and can Fukuyama provide us with a compelling account of it? Is the human boundary truly necessary for moral rights, as Fukuyama asserts? Does a ban on actions threatening the human boundary necessarily lead us to a ban on enhancement?

To address these questions, we will now consider the argument in a little more detail.

A. NATURAL RIGHTS

Fukuyama defends one particular conception of morality over other theories. Fukuyama begins by noting the major split in moral philosophy between utilitarian theories, where all values are weighed on a scale against other values, and rights-based theories, where certain values trump others no matter the consequences. Fukuyama then defends a particular conception of rights-based morality (natural rights) over two other rights-based theories (divine rights and positive rights).²⁰ The principal question dividing these theories is, what is the source of rights? Divine rights would come from God, natural rights would come from human nature, and positive rights are created through democratic, constitutional decision-making. As Fukuyama describes it, natural rights theory holds that we can identify the moral rights that humans deserve by looking at human nature. Fukuyama admits that natural rights theory has largely fallen out of favor, replaced by positive rights theory. Nevertheless, Fukuyama wishes to resurrect this philosophy.

¹⁹ FUKUYAMA, *supra* note 2, at 172.

²⁰ *See id.* at Ch. 7.

Fukuyama's account of natural rights is problematic. He moves fluidly and interchangeably between two very different assertions: first, that humans deserve natural rights because of something special about humans, and second, that we can tell what morality *is* by looking at human nature. The first assertion is problematic because Fukuyama bases his entire bioethical argument concerning genetics on the human boundary – a boundary that philosophers and ethicists have found infuriatingly troublesome. This reliance on the human boundary gives his larger genetics thesis a shaky foundation, which is a point we will consider in some detail later. The second assertion, that we can tell something about morality by looking at human nature, is similarly problematic. In the first place, looking to human nature undermines Fukuyama's very first contention that we should discard utilitarianism in favor of deontological, rights-based morality. Casual observation, as well as the best current neurological research, tells us that humans tend to make moral decisions by a combination of utilitarian and rights-based thinking.²¹ Furthermore, much of human nature is not very nice. If natural rights theory tells us that we should take our moral cues from what humans tend to do, we are given no methodology to distinguish between the good things they do and the bad. If humans tend to have wars, does this mean that the natural rights theory tells us war is moral?

Fukuyama acknowledges this problem, but his answer does not satisfy.²² He gives us something akin to Posner's third factor when he writes: "Violence, in other words, may be natural to human beings, but so is the propensity to control and channel violence. These conflicting natural tendencies do not have equal status or priority. Human beings reasoning about their situation can come to understand the need to create rules and institutions that constrain violence in favor of other natural ends, such as the desire for property and gain, that are more fundamental."²³ In other words, if human beings enter into competitive equilibriums that balance their drives for combat and wealth accumulation, then Fukuyama says we have thus identified morality. This view, like Posner's, draws heavily on sociobiology and game theory. The irony here is that, while Posner is direct and tells us there is no *ought* (so we should concentrate on the *is*), Fukuyama wants to use sociobiology to show us that *ought* can be found in the nasty,

21 See e.g., Joshua D. Greene et al., *An fMRI Investigation of Emotional Engagement in Moral Judgment*, 293 SCIENCE 2105 (2001). The authors argue that the use of Kantian versus utilitarian reasoning varies by situation, affected by the degree to which a particular scenario engages emotional processing in the brain.

22 Fukuyama labels this critique of natural rights theory the naturalistic fallacy. He describes the position as the idea that you cannot look to the *is* (e.g., the empirical world) to discover the *ought* (e.g., the normative ideal to which humans should aspire). See FUKUYAMA, *supra* note 2, at 114.

23 See *id.* at 127.

brutish *is*. However, the only guidance Fukuyama offers is that nature can set limits for our view of *ought* by pointing to failed experiments (e.g., communism failed, so its principles cannot represent a normative ideal for humans). Yet such a theory is unable to tell us if human nature is traveling in the wrong direction, so long as we do not reach communist-level meltdown: in other words, Fukuyama wants nature to show us the *ought*, but all he has proven is that nature can show us the *isn't*.

In any event, whether or not Fukuyama is successful in building a case for natural rights is largely irrelevant. The thrust of Fukuyama's argument is that genetics can "disrupt" the human boundary, which will then undermine our system of moral rights. However, the human boundary is implicit in nearly all strains of moral philosophy. In the case of utilitarianism, there is the question of whose utility counts and for how much. As Posner notes, a utilitarianism that did not observe the human boundary would produce radical pronouncements, such as limiting the number of humans to maximize the happiness of sheep.²⁴ In the case of divine rights, there is a stark distinction drawn between humans and the other animals of the earth, based on the Western *Genesis* view of creation. In the case of positive rights, the system of moral rights is whatever the voting majority (or supermajority) says it is, and the boundary of the voting class has been pushed outward over time to match up with the human boundary (there are, of course, questions of citizenship, but the human boundary serves as the functional limit for who gets to vote on rights).

Therefore, Fukuyama has done more than is necessary for his argument when he selects and defends a particular moral theory. If the problem with genetics is that it may disrupt the human boundary, this poses problems for all of the above theories. Fukuyama needed only to note that in all mainstream strains of moral theory, the human boundary defines the scope of who receives heightened moral consideration (or in the case of positive rights, who gets to determine what morality is). In fact, in defending a highly controversial natural rights theory (a theory that is, as he notes, largely considered "debunked"), Fukuyama makes a weaker case than he otherwise could for the preservation of the human boundary.²⁵

24 See Posner, *supra* note 9, at 103.

25 FUKUYAMA, *supra* note 2, at 112.

B. FACTOR X

The natural rights argument requires Fukuyama to show that moral rights derive from some special aspect of human nature. Since this quality is hard to define on first blush, Fukuyama begins by positing its existence and naming it Factor X. He promises to flesh out the content of Factor X over the course of his argument.

Factor X is the basis for the moral rights promised to all persons. “What the demand for equality of recognition implies is that when we strip all of a person’s contingent and accidental characteristics away, there remains some essential human quality underneath that is worthy of a certain minimal level of respect – call it Factor X.”²⁶ If all humans deserve equal rights, then they must all possess Factor X equally: “Factor X is the human essence, the most basic meaning of what it is to be human. If all human beings are in fact equal in dignity, then X must be some characteristic universally possessed by them.”²⁷ Accordingly, if non-humans are *not* entitled to human rights, they must *not* possess Factor X. The essence of the human boundary is that if you have Factor X, you are on the inside; if you don’t, you are out with the cows.

As Fukuyama notes, quite a lot turns on whether you are entitled to such rights: “You can cook, eat, torture, enslave, or render the carcass of any creature lacking Factor X, but if you do the same thing to a human being, you are guilty of a ‘crime against humanity.’”²⁸

Now that we know what’s at stake, can Fukuyama give us a compelling account of what Factor X is? After much analysis, his conclusion is that several features of human beings, including their subjective consciousness, emotional range, rationality, moral choice, language, and culture combine into a whole that is more than the sum of its parts. He writes: “It is not sufficient to argue that other animals are conscious, or have culture, or have language, for their consciousness does not combine human reason, human language, human moral choice, and human emotions in ways that are capable of producing human politics, human art, or human religion.”²⁹ Fukuyama accepts evolution, but then suggests that along the continuous chain of evolution, there has been a discontinuous leap that distinguishes the human species in kind from its predecessors (he notes that the Pope has called this an “ontological leap” on the

26 *Id.* at 149.

27 *Id.* at 150.

28 *Id.*

29 *Id.* at 161.

evolutionary chain, wherein a soul was inserted into humans alone).³⁰ Thus, Fukuyama concludes, in a section titled “What to Fight For”:

If what gives us dignity and a moral status higher than that of other living creatures is related to the fact that we are complex wholes rather than the sum of simple parts, then it is clear that there is no simple answer to the question, What is Factor X? That is, Factor X cannot be reduced to the possession of moral choice, or reason, or language, or sociability, or sentience, or emotions, or consciousness, or any other quality that has been put forth as a ground for human dignity. It is all of these factors coming together in a human whole that make up Factor X. Every member of the human species possesses a genetic endowment that allows him or her to become a whole human being, an endowment that distinguishes a human in essence from other types of creatures.³¹

These features combine to create the human whole, which gives rise to our special moral status – which is what Fukuyama wants us to protect from the possibilities of genetic engineering.

Let us now consider a few problems with this conception of Factor X.

1. CIRCULARITY AND INCOMPLETENESS

There is a circularity in Fukuyama’s reasoning that should raise our first doubts about Factor X. In the above conclusion, Fukuyama enumerates no complete, definite list of features that constitute Factor X. Instead, Fukuyama argues that it is the human whole, which includes the features he listed plus others, that creates Factor X.

Notice the circularity. Fukuyama began the chapter by stating that there is something special about human beings, which he temporarily named Factor X. He concluded his investigation of this quality by stating that, in the end, Factor X is what is special about human beings. In other words, his argument is simply a restatement of his conclusion.

However, there is an admission at the end of the chapter that suggests an even more troubling circularity. In a final aside, Fukuyama

30 *Id.*

31 *Id.* at 171.

notes that “There is a strong prudential reason for not being too hierarchical in the assignment of political rights, however. There is, in the first place, no consensus on a precise definition of that list of essential human characteristics that qualify an individual for rights.”³²

This is a staggering admission. As we have seen, Fukuyama began the Factor X investigation by telling us that humans, and only humans, deserve human rights because we all have Factor X. But here, at the end of the chapter, he tells us we do not agree on what Factor X is, so we should act as if the net is just wide enough to include all humans (but no non-humans).³³

Which is it? Do humans get rights because they all have Factor X (the stated point of the chapter), or do humans get rights simply because they are human, and we will just define Factor X to equal being human?

If Fukuyama had wanted to take the easy way out, all he needed to do was follow Posner’s solution to the boundary problem. Posner writes, “A better answer, I believe, is simply to say that we don’t care about animal utilities save as they enter into human utility functions, and leave it at that.”³⁴ Posner is to the point, if not satisfying. He solves a difficult question by saying he doesn’t care and simply asserting special moral status for humans. Fukuyama, at least in his stated goals, did not want to take this route. He wanted to argue that yes, in fact, there is a principled distinction between humans and non-humans that justifies a moral difference. Yet in the end, his conclusion amounts to Posner’s assertion that humans get special rights because they are humans.

Thus, Fukuyama cannot escape the criticisms of philosophers like Singer, who argue that species-based morality simply asserts human superiority by fiat, not by principle.³⁵

32 *Id.* at 175.

33 One who has not read Fukuyama’s book may think that I did not notice his use of the modifier “political” before the word “rights” in the above quotation. They might wonder whether Fukuyama is suggesting a different standard for political and moral rights, and whether my argument here is ignoring that distinction. However, an inspection of Fukuyama’s discussion on pages 174-75 reveals that he is using moral and political rights interchangeably on these pages, and therefore his prudential argument is indeed in conflict with his otherwise *a priori* moral argument. See FUKUYAMA, *supra* note 2, at 174-75.

34 See Posner, *supra* note 9, at 113.

35 See PETER SINGER, ANIMAL LIBERATION Ch. 1 (1990).

2. CONTINUUMS VERSUS GROUPS

In Fukuyama's account of Factor X, there is also a tension between *continuums* and *groups* that further undermines the theory.

As stated earlier, Factor X must apply to all humans and no non-humans to support Fukuyama's argument. That is why we can "cook, eat, torture, enslave, or render the carcass of any creature lacking Factor X, but if you do the same thing to a human being, you are guilty of a 'crime against humanity.'"³⁶

However, the case begins to show its fault lines when Fukuyama explores animal rights. He notes: "if animals have a 'right' not to suffer unduly, the nature and limits of that right depend entirely on empirical observation of what is typical for their species – that is, on a substantive judgment about their natures...We tend to accord conscious creatures greater rights in this regard because, like humans, they can anticipate suffering and have fears and hopes."³⁷ So far, so good: an animal deserves rights commensurate with its natural abilities; this is consistent with his view of natural rights. As such, a dog would have more rights than a salamander, because the dog has higher cognition and a greater capacity to experience pain and emotions. Of course, no dog has the human right to vote, because it lacks the capacities which make a right to vote sensible in the dog's case.³⁸

Fukuyama notes a similar continuum of rights among humans, based on their natural abilities. He observes that "An elderly person with Alzheimer's, for example, has lost the normal adult ability to reason, and therefore that part of his dignity that would permit him to participate in politics by voting or running for office."³⁹ Again, this is consistent with his view of natural rights.

This is where Fukuyama gets into trouble. In other passages, Fukuyama explicitly rejects the continuum-based view of morality.⁴⁰ "Reason, moral choice, and possession of the species-typical emotional gamut are things that are shared by *virtually* all human beings and therefore serve as a basis for *universal* equality" (emphasis added).⁴¹ Suddenly, Fukuyama is using words like "species-typical" and asserting that traits shared by "virtually all" humans provide a

36 FUKUYAMA, *supra* note 2, at 150.

37 *Id.* at 146.

38 *Id.*

39 *Id.* at 174.

40 *Id.* at 154-55.

41 *Id.* at 174-75.

basis for “universal” rights. He has thus shifted from a continuum of rights, specific to each individual being’s nature, to a set of rights given to a defined group based on their average group characteristics. The reason for this shift is clear: Fukuyama is troubled by the potential consequences of a philosophy that allows us to say that humans should get different rights based on their different qualities. And as soon as his natural rights theory pushes him to acknowledge a continuum of rights commensurate with each being’s specific nature, he retreats, performing intellectual somersaults to make his theory reach a different conclusion.

The problem is that the two approaches, *continuum* and *group*, are mutually exclusive, but Fukuyama straddles the two. The whole point of Factor X was that every human, and only humans, possess it. That was Fukuyama’s sole justification for providing superior rights to all humans and no non-humans. In Fukuyama’s own words: “Factor X is the human essence, the most basic meaning of what it is to be human. If all human beings are in fact equal in dignity, then X must be some characteristic *universally* possessed by them” (emphasis added).⁴² This is a *continuum* view, because it holds that in order to merit a particular right, you must possess the feature (in this case, Factor X) that is commensurate with the right.

The *group-based* view is highly distinct. It holds that an individual gets rights not based on her own characteristics, but based on the average characteristics of her group. In this vein, Fukuyama writes: “Membership in one of these groups does not guarantee that one’s individual characteristics will be close to the median for that group (I know a lot of individual children who would vote more wisely than their parents), but it is a good enough indicator of ability for practical purposes.”⁴³

This group-based view raises a number of troubling questions for Fukuyama. First of all, what does he mean that group averages are “a good enough indicator of ability for practical purposes?” Given the analytic framework of Fukuyama’s book, we are not interested in good indicators, rules of thumb, or helpful guidelines. Instead, Fukuyama has proposed a work of moral philosophy, in which he argues that genetic engineering must be limited because it threatens our *a priori* source of human rights. It would be very different if Fukuyama were arguing that, as a practical matter, for reasons of say, efficient governance or public welfare, we ought to treat all humans equally and ignore the “rights” of non-humans (this is Posner-land). But Fukuyama has embarked on a different task and has written a different

42 *Id.* at 150.

43 *Id.* at 146-47.

book, one which wants us to take seriously the claim that there is a principled, moral superiority of all humans to all other creatures. Therefore, it is a damaging slip to propose a continuum-based view of human rights, but then – when confronted with the unfortunate consequences of such a theory – tacitly shift to language about individual rights based on group-average characteristics. If Fukuyama had wanted to pursue the Posnerian route of pragmatism, it would have called for a different investigation (empirical, sociological and anthropological, with a very different set of arguments required).

The second troubling question of the group-based model is: what defines the group we care about? The implication of Fukuyama's shift to groups is that all humans get certain superior rights based on their group-average characteristics. But why have we selected out and privileged the "human" class? Why not make it wider, and say that all mammals should get equal rights based on their group-specific traits? This would, of course, drag the protection afforded to humans way down, because they are currently high above average in this particular grouping. Or what would stop someone from drawing the class narrowly, saying that a particular race, ethnicity, or religion should get rights based on their group-average traits, rather than equal human rights? The problem Fukuyama faces is that his assertion of the human group is arbitrary, once again akin to the Posnerian idea that we care about humans because we do. When Fukuyama embraced a continuum view based on Factor X, he had an answer to these unfortunate questions. But when Factor X proved elusive, and he shifted tacitly to a group-based view, he ran into a difficult mess.

If Fukuyama had followed the logic of his original, continuum-based theory, he would have reached many of the same conclusions as the animal rights bioethicist Peter Singer. Though Singer is a utilitarian and Fukuyama is a rights theorist, their theories would arrive at much the same place. Singer writes, "The evil of pain is, in itself, unaffected by the other characteristics of the being who feels the pain."⁴⁴ Therefore, if animals have the capacity to feel physical pain much as humans do, then it is as wrong, morally, to torture animals as it is to torture humans. Note the consistency with Fukuyama's natural rights principles: if the nature of a being is to abhor pain, then they have a moral claim against the arbitrary infliction of pain by others. Yet, as we know, this is not the conclusion Fukuyama reaches, because he is torn between the continuum view and the group view. As such, he presents a binary conclusion to a graduated theory, telling us that animals can be tortured, hunted, and eaten, while humans cannot.

44 See SINGER, *supra* note 35, at 20-21.

Singer is more consistent. His theory allows that we should choose to save the average human life over the average animal life, when that choice is forced. However, he does not reach this conclusion because human lives are on average more valuable than animal lives. Rather, he would use a continuum-based method; i.e., actually comparing the two lives in question and then making the moral choice based on the particular beings. Therefore, if the choice came down to a terminally ill, brain-dead human and a healthy dog, Singer's theory would choose to save the dog, all other things equal. No doubt, this outcome may cause outrage to many people (Fukuyama rejects it specifically).⁴⁵ Singer's response is that "Most human beings are speciesists ... ordinary human beings – not a few exceptionally cruel or heartless humans, but the overwhelming majority of humans – take an active part in, acquiesce in, and allow their taxes to pay for practices that require the sacrifice of the most important interests of members of other species in order to promote the most trivial interests of our own species."⁴⁶ In other words, our current intuition is set to disregard animal suffering. Singer hopes the logic of his theory will convince open-minded readers that this present intuition is wrong.

However, the validity of Singer's conclusions is not at issue here. The point is that there is a deep confusion at the heart of Fukuyama's moral theory. This confusion is the direct result of the difficulty of the boundary problem. Notice the Catch-22 Fukuyama is in. If he had a compelling definition of the human boundary (Factor X), then a continuum view would protect human rights while looking at individuals. However, in the absence of this compelling account – and even Fukuyama finally admits it doesn't currently exist⁴⁷ – the continuum view leads to aristocracy, while the group-based view leads to either racism or absurdity. Once again, the tenuousness of basing the case against genetic engineering on the human boundary is revealed.

3. CAPACITY FOR WHAT

We have already seen that at the end of the day, Fukuyama does not have a complete account of Factor X, and he therefore resorts to a circular argument. However, throughout the text there are

45 FUKUYAMA, *supra* note 2, at 154.

46 See SINGER, *supra* note 35, at 9.

47 Fukuyama writes, "There is, in the first place, no consensus on a precise definition of that list of essential human characteristics that qualify an individual for rights." FUKUYAMA, *supra* note 2, at 175.

references to human features that give some substance to his account of Factor X, and so we evaluate these factors now.

If rights derive from human nature, do they arise from (1) what we *are*, (2) what we *do*, or (3) what we are *able* to do? Fukuyama appears to support the third option: Factor X is based on our human capacity to do certain things.⁴⁸ In his definition of Factor X, he writes: “Every member of the human species possesses a genetic endowment that allows him or her to become a whole human being, an endowment that distinguishes a human in essence from other types of creatures.”⁴⁹ In this formulation, it is not that we *are* “whole human beings” that gives us rights, nor is it that we *do* whatever it is whole human beings do; it is that we have an “endowment” that “allows” us to become a whole human being. This is a *capacity* or *potential* argument; it is not an argument that hinges rights on how we actually act as individuals.

If capacity is the issue, then we must ask, capacity to do what? A few answers are spread throughout the text. In one section, Fukuyama writes: “Only human beings can formulate, debate, and modify abstract rules of justice.”⁵⁰ In another passage, he states: “It is not sufficient to argue that other animals are conscious, or have culture, or have language, for their consciousness does not combine human reason, human language, human moral choice, and human emotions in ways that are capable of producing human politics, human art, or human religion.”⁵¹ Notice that this final passage eliminates options (1) and (2) (*who we are* and *what we do*, respectively) and defines a particular goal for option (3). It is not enough, if we take this sentence seriously, to possess human reason, language, moral choice, and emotions. To have Factor X, we must “combine” these qualities “in ways that are capable of producing human politics, human art, or human religion.”⁵²

This capacity-based view raises three major questions. First, there is an issue of under-inclusiveness. Why is capacity to produce politics, art, and religion a valid criterion for Factor X? Recall that Factor X decides who gets to be cooked, eaten, tortured, and enslaved.

48 I do believe, on the whole, that Fukuyama wishes to support option (3). However, there are particular arguments in Fukuyama’s book that seem to point towards option (1) as a secondary, but necessary element for moral consideration. See particularly his discussion of Artificial Intelligence. There, he argues that no matter how sophisticated a computer’s output is, it cannot be worthy of moral consideration as long as it lacks subjective experience.

49 FUKUYAMA, *supra* note 2, at 171.

50 *Id.* at 165.

51 *Id.* at 170.

52 *Id.*

As such, the ability to produce art or politics seems a little too high a bar. There are many beings, including those with severe cognitive disabilities, who lack the higher level capacities Fukuyama is describing, and yet I would not want them to be cooked and eaten as Fukuyama allows for those who lack Factor X.

In fact, the problem of under-inclusiveness here is immense and extends well beyond those with mental disabilities. Factor X is supposed to be the universal human quality. However, it is not self-evident that all, or even most, humans have a capacity to produce art, politics, or religion. Many of us have a capacity to *observe* art, politics, and religion, but that is not what Fukuyama said. *Production* of these goods was his distinguishing feature. Therefore, if we take these passages seriously as an account of Factor X, then Fukuyama has devised a definition of Factor X that fails to capture a huge number of (if not most) humans.⁵³

Second, Fukuyama never gives an account of why these particular goods matter. I personally enjoy art and religion, but I am not sure, from reading Fukuyama's account, why the capacity to produce these things should be the basis for moral rights. The closest Fukuyama comes to making an affirmative case for the moral relevance of art or politics is their complexity,⁵⁴ but Fukuyama knows better than to premise moral rights on complexity alone. Complexity and morality have no necessary relationship. A pattern of viral mutation is complex, yet it does not merit moral consideration. So why politics, art, and religion?

Third, why does *capacity* matter morally? What about the person who could produce these things but does not and will not?

53 It is possible that Fukuyama stepped into under-inclusiveness while conscientiously avoiding the inherent risk of *over*-inclusiveness (which is a common pitfall for boundary theories). As Singer has pointed out, most philosophical accounts of what matters for moral inspection (e.g., intelligence, capacity to feel pain) apply to many non-human animals, and sometimes in greater quantity than some humans. For example, Singer writes that non-human animals, infants, and the severely mentally retarded can be in the same category in terms of intelligence and awareness, and so morally, what we can do to one, we must say we can do to all:

if we use this argument to justify experiments on nonhuman animals we have to ask ourselves whether we are also prepared to allow experiments on human infants and retarded adults; and if we make a distinction between animals and these humans, on what basis can we do it, other than a bare-faced – and morally indefensible – preference for members of our own species?

Singer, *supra* note 35, at 16. Fukuyama obviously wishes to avoid such disturbing questions by drawing a boundary that captures all humans and only humans. But in dodging over-inclusiveness, he travels deep into under-inclusiveness.

54 See FUKUYAMA, *supra* note 2, at 163-65 for a discussion of emergent complexity.

What if everyone in human society ceased to produce art, religion, and politics – would this disable Fukuyama's system of moral rights, or is it enough that we retain the capacity to produce these things?

I will not belabor these points, because they are simply alternate ways of reaching the same core instability that is detailed elsewhere in this section: the human boundary is a problematic concept on which to base an important ethical position.

In sum, the human boundary is a focal point of controversy and confusion in moral philosophy. We feel it intuitively, and it is a powerful force for peace and justice in the human community. Yet describing it analytically has proved slippery and problematic; almost any route you take can lead to unpleasant outcomes – what Posner calls moral monstrosity. From here you can go the direction of many scholars, including Ackerman, Singer, and Kant, who explicitly base their moral theories on qualities that are not linked, by definition, to being a human *per se*.⁵⁵ Or, you can go the route of Posner and simply defend the human boundary by fiat or by reference to intuition. Yet Fukuyama has built a crucial bioethical case on a philosophical house of cards, and that is why this essay takes on the task of refoundation.

C. GENETICS AND FACTOR X

Finally, what about Fukuyama's conclusion: that we ought to limit genetic science to protect Factor X, and that this principle leads us to prohibit genetic enhancement?

Let us assume for this section that Fukuyama has given us a complete and satisfactory account of the human boundary. What then is the mechanism by which genetic engineering would disturb our shared humanity and thus our human rights?

⁵⁵ See BRUCE ACKERMAN, SOCIAL JUSTICE IN THE LIBERAL STATE 71-74 (1980). Ackerman premises liberal citizenship (and thus the protections the liberal citizen receives from abusive power) on the ability to engage in a communication about power relations. Ackerman writes: "A liberal state is nothing more than a collection of individuals who can participate in a dialogue in which all aspects of their power position may be justified in a certain way." This requires that actors be able to understand one another ("it is this simple chain that links the theory of citizenship to the theory of translation"), but so long as they can communicate sufficiently, they need not be human. Thus, Ackerman notes that a roaring lion cannot sufficiently ask and answer the legitimacy questions required for citizenship, but a talking ape could and could therefore be a citizen. See *id.* at 71-74. See also SINGER, *supra* note 35, at 19 ("Whatever criteria we choose, however, we will have to admit that they do not follow precisely the boundary of our own species.").

Recall Fukuyama's main principle:

What is it that we want to protect from any future advances in biotechnology? The answer is, we want to protect the full range of our complex, evolved natures against attempts at self-modification. We do not want to disrupt either the unity or the continuity of human nature, and thereby the human rights that are based on it.⁵⁶

Later, Fukuyama works to give substance to this principle by suggesting ways to begin regulating technology in accordance with his theory. He suggests that "One obvious way to draw red lines is to distinguish between therapy and enhancement, directing research toward the former while putting restrictions on the latter. The original purpose of medicine is, after all, to heal the sick, not to turn healthy people into gods."⁵⁷

The critical link in his main statement is that disrupting the unity of human nature will thereby disrupt human rights. Why?

Fukuyama does not provide an explicit list of mechanisms, but we can tease out a few from various parts of the text: principally, he is concerned about (what I will call) *stratification* and *reductionism*.

1. STRATIFICATION

Stratification suggests that enhancement will allow us to increase genotypic and phenotypic diversity. Eventually, such diversity will press us to the point of losing our shared humanity. Fukuyama fears that this could lead to increased social stratification and even oppression:

the posthuman world could be one that is far more hierarchical and competitive than the one that currently exists, and full of social conflict as a result. It could be one in which any notion of 'shared humanity' is lost, because we have mixed human genes with those of so many other species that we no longer have a clear idea of what a human being is.⁵⁸

⁵⁶ FUKUYAMA, *supra* note 2, at 172.

⁵⁷ FUKUYAMA, *supra* note 2, at 208.

⁵⁸ *Id.* at 218.

There are really two levels of concern here. The first is that genetic enhancement may stratify the distribution of genetic talents and advantages more widely than the current natural lottery does. This type of stratification could increase inequality and hierarchy in society, but it does not seem to pose obvious problems for the human boundary. The second more fanciful concern is that creating mixed-species beings, also known as chimeras or transgenic animals, would truly obliterate the species boundary.⁵⁹

Let us consider these two fears separately. The fear of widening the talent distribution is legitimate and practical. Genetic enhancements, like elective cosmetic surgery today, could be expensive and not covered by health insurance. As a result, enhancement may only be accessible to the rich, who could use their artificially increased skills to widen their preexisting advantages. Some might argue that this is only different in scale from the current state of affairs, where rich parents provide their children with the best schools and exam preparation money can buy, in turn calcifying social hierarchies. This may certainly be an area for social concern and egalitarian regulation.⁶⁰

However, even if we give Fukuyama's theory the benefit of the doubt, it cannot explain what is wrong with this *enhancement inequality*. Assume there is a coherent Factor X that imbues rights to all humans. If some humans receive increased intelligence or athletic ability through enhancement, while others do not, both classes of people will still possess Factor X. This is true because Factor X, we are told, is the minimum core of what it means to be human, and this will still be possessed by all humans, as Fukuyama states "when we strip all of a person's contingent and accidental characteristics away, there remains some essential human quality underneath that is worthy of a certain minimal level of respect – call it Factor X."⁶¹ There are currently wide distributions of talents among humans, and yet Fukuyama tells us all humans possess Factor X. If these distributions are widened, why would this affect the minimum, shared quality that protects us all? This

⁵⁹ "Fanciful" may be too dismissive, given that patents currently exist on transgenic species, and some scientists have expressed interest in creating human/non-human hybrid species. See, e.g., FUKUYAMA, *supra* note 2, at 206-07; Slater, *supra* note 1.

⁶⁰ One could imagine two approaches: enhancement for none or enhancement for all. This is a question of distributive justice and well beyond the scope of this essay. However, it is worth pointing out that to date, major theories of distributive justice take the natural talent lottery as given, and then they seek to wrestle with issues of fairness given this inequality of ability. If genetic talents become pieces in play, rather than starting rules of the game, moral philosophies would have a lot to talk about.

⁶¹ FUKUYAMA, *supra* note 2, at 149.

does not mean we shouldn't worry about inequality – it simply means that Fukuyama's theory does not give us the tools to analyze the harm he is positing.

Now consider Fukuyama's second concern, transgenic species. Once again, there are a vast number of potential, pragmatic harms in creating new species. However, there is also a similar inability to explain Fukuyama's concern via his moral theory. Let us assume that other creatures gain human level quantities of Factor X (for example, the capacity to combine emotions, language, reason, and other higher level traits into art, politics, and religion). In this case, why wouldn't these creatures also qualify for "human" rights? And if these beings refuse to abide by the rules of shared Factor X morality, how is this problem any different than that we face today when plenty of humans refuse to abide by these moral rules? In other words, Fukuyama is assuming that once non-human creatures gain Factor X, then Factor X will cease to act as a source of rights. However, this is not a necessary outcome of his theory. Quite the opposite, it could simply be the case that more creatures will receive Factor X protection.

Surprisingly, in a different section of the book, Fukuyama reveals that he shares this intuition. He quotes a hypothetical posed by McShea: are you more likely to enter into a moral relationship with a lion with human speech and emotions or a human with a lion's speech and emotions? Fukuyama's response: "The answer, as countless children's books with sympathetic talking lions suggest, is the lion, because species-typical human emotions are more critical to our sense of our own humanness than either our reason or our physical appearance."⁶² Here, Fukuyama is focusing on one element of Factor X, emotions. Yet the point remains, a lion possessing all of Factor X would be a fine candidate for a moral relationship with humans. While Fukuyama admits as much, he does not accept the obvious conclusion: if more creatures gain Factor X, this would simply expand our conception of who gets Factor X. It suggests nothing about the tarnishment or diminution of Factor X's value. As long as you don't write "human" into the definition of Factor X (as Fukuyama does), then his theory of moral rights is actually quite flexible for new situations.

I do not wish to diminish the potential problems of both enhancement inequality and transgenic creation. There are many practical and moral concerns, and Fukuyama should be applauded for calling attention to them. The point here is that Fukuyama must go outside of his theory to describe these potential harms. However, this essay is concerned with evaluating the central argument of

62 *Id.* at 169.

Fukuyama's theory: that genetic engineering may disrupt the human boundary and thus natural human rights. You cannot reach Fukuyama's conclusions here by applying this moral theory.

Therefore, Fukuyama has not shown that an increase in diversity will necessarily harm Factor X or moral rights.

In addition, we must also consider the possibility that genetic enhancement can *decrease* diversity, not just increase it. If we assume that society holds certain ideals for appearance, intelligence, success, etc., then it is at least reasonable to assume that we might see a convergence, rather than a divergence, of traits if enhancement were allowed. This is certainly the case in current elective cosmetic surgery, where we see regression towards a physical ideal: the sizes and shapes of manufactured bodies tend to cluster, not diverge. Of course, this is not necessarily a good thing: using enhancement to decrease diversity is loaded with the air of eugenics. The point here, though, has nothing to do with whether elective convergence is good or bad. The point is that Fukuyama cannot address this concern with his theory alone, because in terms of preserving the human boundary, genetic convergence would be useful.⁶³

Therefore, it is not at all clear that Fukuyama's stratification theory supports his ban on enhancement. If enhancement leads to divergence, there is no necessary reason that this would harm human rights or Factor X. And if enhancement leads to convergence, then the stratification argument does not apply. We may think convergence is very bad for a number of reasons, but Fukuyama's theory does not say much about it, because in boundary-preservation terms, convergence is helpful, not harmful.

2. REDUCTIONISM

Fukuyama points out a second way in which genetic science could undermine Factor X and human rights, the reduction of our human essence. He writes, "If Factor X is related to our very complexity and the complex interactions of uniquely human characteristics like moral choice, reason, and a broad emotional

⁶³ The counterargument is that if 90% of the population converges around certain idealized traits, then this makes the remaining 10% more vulnerable to persecution. This may be true, but it is not a boundary issue, because the convergence occurs *within* the already defined boundary. So it is again outside the domain of Fukuyama's theory, since he posits that Factor X is wide enough to cover all individuals within the current diversity of human life.

gamut, it is reasonable to ask how and why biotechnology would seek to make us less complex.”⁶⁴

Fukuyama’s answer is that our broad emotional gamut is at stake. “We will be constantly tempted to think that we understand what ‘good’ and ‘bad’ emotions are, and that we can do nature one better by suppressing the latter, by trying to make people less aggressive, more sociable, more compliant, less depressed.”⁶⁵ This leads to two harms. First, he argues that all of our virtues are defined in opposition to suffering and death: “In the absence of these human evils there would be no sympathy, compassion, courage, heroism, solidarity, or strength of character.”⁶⁶ Second, Fukuyama argues that without travails, humans would become hollow, and human life would become shallow: “A person who has not confronted suffering or death has no depth.”⁶⁷

These are challenging points, and though some may be inclined to reject them reflexively (‘Suffering is good? You can have it!’), I believe they merit deeper consideration.

However, once again there is a disconnect between Fukuyama’s theory and the issues he wishes to regulate. He asserts the relationship between suffering and depth. But what does this tell us about the relationship between suffering and the human boundary or human rights?

Fukuyama offers one answer: an important constituent of the human boundary is sympathy, and sympathy requires the capacity to suffer personally in order to feel the suffering of others. In Fukuyama’s view, this sympathy is a sort of social glue that ties together the human community.⁶⁸ However, this explanation has two shortcomings. The first is that even if we eliminated much human suffering through genetic engineering, it is not clear what effect, if any, this would have on the human boundary. Under Fukuyama’s assumptions, if we are genetically diminishing emotional pain and suffering, then we are presumably also able to diminish aggression and anti-social behavior. Therefore, there is no reason to assume that we ought to ban emotional modification on boundary grounds, when it is possible that such modifications may strengthen the boundary.

Second, and more importantly, the boundary issue fails to capture a large element of what Fukuyama is really concerned about

64 FUKUYAMA, *supra* note 2, at 172.

65 *Id.*

66 *Id.* at 173.

67 *Id.*

68 *Id.*

here. Even if you accept his boundary-threat, this would only limit biotechnology insofar as it threatened the human boundary. As such, the theory cannot account for his intuition that what is really at stake is not the human boundary, but the depth and shape of human life. Again, I would assert that this is a question of meaning or essence in human life, and this is the basis upon which I will ground my reconstruction. It is worth noting here that Fukuyama shares this concern – that genetics may somehow diminish the essence of human life – but again, his theory does not provide us with a language to address these concerns.

Thus, Fukuyama does not prove that genetic reductionism threatens human rights. However, it is further possible to argue that genetic enhancement has the ability to strengthen human rights as Fukuyama defines them. If we were capable of producing good politics, art, and science before, then with enhanced skills we might be able to produce *better* politics, art, and science. And, following the thread of Fukuyama's natural rights argument, these enhanced capacities would entitle us to *enhanced*, not diminished, moral rights.

Furthermore, right now only *some* humans are capable of producing the things that Fukuyama says lead to moral rights. With enhancement, *more* humans would have the distribution of talents and predispositions that Fukuyama says give rise to special moral rights. Thus, genetic enhancement, applied properly, could better distribute Factor X, or even kick us up, as a species, to Factor Y.

D. FINAL THOUGHTS ON OUR POSTHUMAN FUTURE

In the preceding sections, I have attempted to show three points: first, that Fukuyama does not provide a satisfactory account of the human boundary and human rights; second, that even if he had provided a satisfactory account of the human boundary, it still would not explain the genetic harms he is concerned about; and third, even if his account of the human boundary did explain those genetic harms, he still has not shown how a distinction between therapy and enhancement would prevent those harms. Therefore, *Our Posthuman Future* does not answer the question that I began with: what exactly is wrong with genetic enhancement?

As a postscript to this analysis of Fukuyama, I believe there is a revealing tension at the end of *Our Posthuman Future*. After spending the entirety of his book seeking to define and defend Factor X, Fukuyama makes a startling off-hand comment on the penultimate

page: “So, despite the poor reputé in which concepts like natural rights are held by academic philosophers, much of our political world rests on the existence of a stable human ‘essence’ with which we are endowed by nature, *or rather, on the fact that we believe such an essence exists*” (emphasis added).⁶⁹

This last clause should leap off the page. Fukuyama has dedicated his text to arguing the first half of that sentence, that our political world rests on the existence of a stable human essence endowed by nature. Only in the final sentences of the book, without fanfare and without further support, does Fukuyama let slip what might truly be animating his argument. Fukuyama is not really be worried about metaphysics, but practical social stability. In other words, it does not matter if Factor X exists. What matters is that we believe it exists.

If this is the case, then no part of Fukuyama’s conclusion that bioethics should protect the human boundary depends upon his philosophical case. There is a disconnect, because the thrust of the book argues a proposition that is neither necessary nor sufficient for its final conclusion. Either Fukuyama wrote the wrong book, or he wrote exactly what he meant, but then hedged his bets in the final pages. I suspect it was the latter, but in any event, this disconnect leads to two ironies.

The first irony is that if Fukuyama is really, at the end of the day, concerned with social stability and political order, this would have been a much easier case to attempt. Simply put, the argument would go like this: we should not tamper with the popularly conceived boundaries of humanity because we might splinter ourselves into more and more distinct groups. Given our all-too-familiar tendency toward conflict with the *other*, this radical diversity might lead to disastrous consequences. Fukuyama worries that genetic enhancements could upset our delicate belief in Factor X, undermining our system of human rights, and in turn upsetting the social stability which flows from having an accepted system of human rights. This is a reasonable issue to raise, and it is certainly easier to bring this up than to conceive and defend a new philosophical theory of bioethics. So Fukuyama has taken the long road in an effort to get to a place where many people are probably already settled.

The second irony is perhaps more damaging. One might be tempted to argue: so what if Fukuyama went the long way around, making a highly specific moral argument for a pragmatic position? The whole includes the lesser, and so a successful defense of natural human

69 *Id.* at 217.

rights will more soundly defend his position than asserting a mere *need* to believe it is so. However, the case may be that Fukuyama's moral philosophy undermines his practical point. By taking on the difficult task of trying to defend the blunt human boundary, Fukuyama has shone a spotlight on how slippery it really is. Factor X may be a bit like faith; there are good reasons to have it, but inspecting it analytically is the best way to harm it.

Does switching to a descriptive, rather than normative, view save Fukuyama's thesis? I think the answer is that to some extent, it helps. It is true that as an empirical matter, most of us believe in a shared humanity, and this belief appears in much of our thinking on positive legal rights. The human boundary is at work in the International Declaration of Human Rights, the Convention on Human Rights and Dignity With Regard to Biomedicine (Council of Europe), the Nuremberg Code barring experimentation on humans, and many other documents on human rights. Even Posner, who is famously skeptical of moral philosophy claims, describes a similar practical concern in his essay on cloning and genetic engineering:

If genetic engineering is expensive, then one might foresee that wealthy people will produce intelligent and beautiful offspring, which over time will become steadily genetically distinct from the offspring of poor people, until there are two entirely different species that cannot reproduce sexually. Thus, even if racial discrimination ends, new forms of discrimination may rise in its place, including discrimination that is a consequence of choices people make about the genetic makeup of their offspring.⁷⁰

However, on this point, Fukuyama's work gives us some cause for hope as well as concern. He points out, as a historical matter, that our sense of fellow-feeling is expandable, and that over time we have tended to push the boundary for moral concern increasingly outward, from the days of tribalism and then aristocracy to the current humanistic view of liberalism.⁷¹ Furthermore, Fukuyama stands as an example of someone who truly does believe in the human boundary and its role in morality, and yet even he comes to the conclusion that a new species with humanesque traits would be a good candidate for a moral relationship, as we saw in the lion example.

This is, of course, now an empirical question: either genetically modified humans will or won't treat each other well. So I would add

70 Posner & Posner, *supra* note 17, at 608.

71 FUKUYAMA, *supra* note 2, at 150.

this to the list of serious pragmatic concerns about genetics, including its effect on equality and income distribution, and its potential unintended consequences on genetic diversity and species fitness.

However, these concerns, while important, are only part of the picture. I do not think they provide a complete explanation of the deep unease surrounding genetic enhancement. The practical version of Fukuyama's thesis still allows us to worry about genetic enhancement *only* when it threatens our belief in the human boundary. In the pages above, I eventually grant Fukuyama his strongest case and show how his main concerns, stratification and reduction, do not necessarily follow from a threat to the human boundary. If these arguments are persuasive, then they also apply to the situation in which we only *believe* in the human boundary. Thus, this descriptive form still fails to capture much of what is bothering Fukuyama and others with genetic engineering.

Even if enhancement left the human boundary intact or had no effect on human rights, *even* if it reduced inequality, and *even* if there were no harms to species fitness, I believe there would still be a deep and lasting harm from genetic enhancement.

For that reason, I now turn to a different set of explanations – the question of essence and meaning in human life – to analyze genetic enhancement.

V. GENETICS, LAW, AND ECONOMICS

Before I turn to the affirmative argument, I wish to take a moment to consider the law and economics school and its analysis of genetics to date.

There are three reasons for paying specific attention to the law and economics school in this essay. First, this school has emerged as one of the dominant strains of contemporary legal theory. Second, the law and economics school has been effective (as we shall see below) in deflating much of the irrational hyperbole surrounding genetics in the law. Third, and most importantly, there is something particular in the school's defense of genetics that requires further analysis: it is precisely the methodology of the law and economics school that will be *least* able to recognize the types of harms I suggest for genetic enhancement.

It is too early to tell what the law and economics theorists will say about genetic enhancement. However, a few prominent economically-minded theorists have begun to write on other genetic

topics, and their views have been consistent with the methodology of the school as a whole.

In fact, it is the methodology, independent of particular subject matter, that defines the economic approach. As Gary Becker has written:

Let us turn away from definitions, therefore, because I believe that what most distinguishes economics as a discipline from other disciplines in the social sciences is not its subject matter but its approach...The combined assumptions of maximizing behavior, market equilibrium, and stable preferences, used relentlessly and unflinchingly, form the heart of the economic approach.⁷²

This approach extends beyond matters traditionally understood as economic, and theorists apply this methodology in ethics and jurisprudence as well; as Richard Posner has argued, the incompleteness and indeterminacy of moral theory should compel us to adopt a different, economic value as our normative guide to ethical action: wealth maximization.⁷³

So far, the law and economics school has used its powerful, coherent analysis to dismiss concern over genetics. One example is “genetic discrimination,” or the use of genetic testing by employers, insurance companies, and others to find new information about applicants. In the literature, genetic discrimination is held up as one of the most worrisome issues in genetics. Yet the economically-minded theorist Richard Epstein has responded that genetic discrimination poses no new problems and requires no new solutions.⁷⁴ Epstein writes that “False statements about or deliberate concealment of genetic information is as much a fraud as false statements about or concealment of any other issue.”⁷⁵ He argues that in any potential contractual relationship, be it a job, insurance plan, or marriage proposal, if the applicant does not wish to reveal genetic information, he or she may simply apply elsewhere.

Epstein’s guiding principle, left unstated, is efficiency, greater efficiency in labor markets, insurance markets, the non-economic marriage market, etc. As such, his concern is not that genetic testing

⁷² See BECKER, *supra* note 18, at 5.

⁷³ See Posner, *supra* note 9, at 139.

⁷⁴ Richard A. Epstein, *The Legal Regulation of Genetic Discrimination: Old Responses to New Technology*, 74 B.U. L. Rev. 1, 12-13 (1994).

⁷⁵ *Id.* at 13.

will reveal too much about an individual, but that employers and potential spouses will not have access to this information and will thus make inefficient decisions: "The greater knowledge that comes from testing increases the informational asymmetries that are always the bane of insurance markets."⁷⁶

If one does not share Epstein's concern for efficiency as the primary value meriting protection, then different conclusions could be reached. We might, for example, decide that a potential spouse has a moral obligation to reveal a predisposition for early-onset Alzheimer's, but that a potential employee has a socially conceived right to work and therefore should not have to reveal that information (unless it is a safety concern). The difference between such a position and Epstein's is one of disagreement over who should bear the cost of accidents. Epstein wants a purely efficient free market where all attainable information is used. We might believe, alternatively, that efficiency should be balanced against a community's sense of fairness, and therefore someone with only a predisposition for a disease should be protected in the labor market until that disease manifests and comprises his ability to work. This issue need not be resolved here: I am only highlighting the assumptions and methodology at work in law and economics scholarship.

Eric and Richard Posner use a similarly economic approach in their work on cloning. Many bioethicists find a host of spiritual, ethical, and otherwise intangible critiques of cloning. Some have gone so far as to say that clones are not human. However, the Posners are interested in building a model of the market demand for cloning. They write: "In economic terminology, we focus on the private benefits and the social costs of human cloning."⁷⁷

In sum, the law and economics theorists employ their consistent methodology when discussing issues of genetics and biotechnology. This methodology embraces (1) the cost-benefit analysis for individual and social decision-making, and (2), the normative ideals of efficiency, market distribution, and utility or wealth maximization.⁷⁸ Even so-called descriptive forms of the economic approach (those which do not explicitly rely on any normative economic stance) embrace this normative basis by privileging efficiency and the like over other social values.

76 *Id.*

77 Posner & Posner, *supra* note 17, at 580.

78 Most economists are interested in maximizing utility. However, see Posner, *supra* note 9, at 119, for a defense of wealth as the normatively desirable maximand.

Let's state the issue this way: law and economics scholars are applying their tools to bioethics and generating a predictable set of answers to social problems. Their methodology is highly popular, and thus influential, in law at present. The question then is, what do we think of the normative basis that animates their methodology? Or shall we just accept the conclusions of economics and apply them to law without wondering what normative structure this advances?

Posner famously laid out the case for wealth maximization as a normative principle. His general thesis was that the failure of moral philosophy to produce satisfactory accounts leads us to discard those theories all together. In their place, Posner suggests that wealth maximization "provides a firmer basis for a normative theory of law."⁷⁹ The benefit of wealth maximization is that it "accommodates, with elegant simplicity, the competing impulses of our moral nature."⁸⁰ In other words, as a descriptive matter, the system of market capitalism balances our natural desire for individual gain with our social impulses towards empathy, altruism, and benevolence (which Posner asserts are required for market success).⁸¹ If one accepts these propositions, then Posner further argues that the market provides guidance on controversial moral issues, such as selling babies or organs. Posner states:

There are those who believe that allowing baby sales would have profoundly undesirable effects, would encourage eugenic breeding that could transform the character of the human race, and would increase racial hostility (there is no shortage of black babies for adoption as there is of white ones, so black babies would command a lower price). These points have no weight to one who embraces the wealth maximization principle. He can find no immorality in the idea of a baby market, when morality is derived from economic principle itself.⁸²

Under Posner's system, wealth maximization is the only criteria. Therefore, if an efficient market *can* exist for a good, then such a market is moral.

79 *Id.* at 103.

80 *Id.* at 136.

81 Posner writes: "Because the individual cannot prosper in the market without understanding and appealing to the needs and wants of others, and because the cultivation of altruism promotes the effective operation of markets, the market economy regulated in accordance with the wealth maximization principle also fosters empathy and benevolence, yet without destroying individuality." *Id.*

82 *Id.* at 139.

A complete analysis of wealth maximization is beyond the scope of this essay.⁸³ Instead, I wish to focus on one particular issue concerning Posner's theory – which costs we can or cannot value in his system. There are two points here.

A. COSTS WE WON'T CONSIDER

First, as a practical point, the empirical bent of wealth maximization means that costs that are harder to quantify (costs of a more intangible, normative, or even numinous cast) may receive less attention. To be fair, I will not go so far as to say that Posner's theory *cannot* accommodate such factors. Posner notes that the “only kind of preference that counts in a system of wealth maximization is thus one that is backed up by money – in other words, that is registered in a market.”⁸⁴ However, Posner is quick to point out that these costs and benefits need not have an explicit market value or tangible form. Rather, they must “have value which could be monetized by reference to substitute services sold in explicit markets or in other ways.”⁸⁵ Most economists use utility maximization rather than Posner's wealth maximization, and they too suggest ways that intangible goods can be accommodated in a cost-benefit analysis. Utility is essentially the language of choice and trade-offs; thus, for example, when a person chooses between extra income and more time with loved ones, they are weighing monetary and intangible benefits in a single calculus. At least in theory, one could always imagine a series of trade-offs in implicit or shadow markets that could reveal the extent of our valuation of such goods.

Yet even granting Posner the theoretical compatibility, as a practical matter, such values may get pushed aside if we adopt the cost-benefit analysis as our sole metric. This may be what Posner did when he refused to include the “weirdness” of cloning in his model of economic demand, because he considered it “analytically intractable.”⁸⁶ Indeed, Posner's use of the word “intractable” is telling; the primary definition of intractable is “difficult to manage or govern.”⁸⁷ Some values are simply tough to cram into a cost-benefit

83 For fuller accounts, see Anthony Kronman, *Wealth Maximization as a Normative Principle*, 9 J. LEGAL STUD. 227 (1980); Ronald M. Dworkin, *Is Wealth a Value?*, *id.* at 191.

84 Posner, *supra* note 9, at 119.

85 *Id.* at 120.

86 Posner & Posner, *supra* note 17, at 580.

87 THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE (4th Ed.)

analysis and are thus economically frustrating in a public policy model. Even if intangibles *can* be included, it is not likely that they *will*.

This can be seen in Posner's recent defense of a professional, rather than conscripted, army.⁸⁸ Using his economic mode of analysis, Posner dispatches with the communitarian idea of mandatory service by referencing pragmatic economic concerns – a professional army is more effective because an efficient voluntary market is in place. Posner may be right. But what is notable and relevant here is Posner's utter inability to take seriously the communitarian's stated benefits of mandatory service: duty, loyalty, civic virtue, shared effort, commonality, equality. He asks, "How much military effectiveness should we give up to promote the communitarian vision? The communitarians have not told us."⁸⁹ The implication is that no cost-benefit analysis was performed to determine the marginal utility of community compared to other goods. And the communitarians must play by Posner's rules; he will not wrestle with the question of how to value intangible, non-moneterizable social goods. The intractability of these values makes them easy to ridicule when an economic model is implemented.

A critical point follows. The ease of measurement or the ease of identification of a social cost tells us nothing about its importance. If the cost-benefit analysis lends itself to neat economic models and monetized costs that can be traded quantitatively, then what might be the most important costs in some situations may get left out completely – simply because they do not fit neatly into the model.

B. COSTS WE ARE NOT ALLOWED TO CONSIDER

The second point concerns a set of costs that Posner tells us, in his theory, that we *cannot* consider. In the baby example, he argues that we should not care about certain potential "profoundly undesirable effects," including racial hostility and eugenic alteration of the human race. At first blush, one would ask why not. Aren't these "costs," if not for the immediate parties involved in the transaction, than for society as a whole? That alone should qualify them as economic "externalities," which indicate market failure and the need for regulation. Furthermore, despite their non-economic nature, Posner has told us explicitly that wealth maximization must consider and weigh non-monetarized costs and benefits in its calculus. Yet

⁸⁸ Richard A. Posner, *An Army of the Willing*, THE NEW REPUBLIC, May 19 2003, at 27-29 [hereinafter Posner, *An Army of the Willing*].

⁸⁹ *Id.* at 29.

Posner tells us that we can reject these possible harms out of hand, he tells us they hold no weight. So why aren't these costs like any other?

I suspect what Posner is really trying to do is distinguish harms that result from a good sold on the market from harms that result from using the market mechanism to sell a good. This view makes sense given his rationale in the baby selling passage; there is "no immorality in the idea of a baby market, when morality is derived from the economic principle itself."⁹⁰ This explains why the racial hostility and eugenic alterations discussed in the passage are dismissed, rather than classified as costs or externalities. The racial hostility discussed is not racial hostility generated from, for example, a racist book sold on the market. Rather, it is the differential pricing of white babies and black babies – an intrinsic feature of the market mechanism – that creates this racial hostility. Similarly, the eugenic breeding discussed is not the result of a technology sold on the market, but rather the operation of consumer purchasing-choice itself. In other words, what distinguishes these costs for Posner is that they are not incidental costs of market goods – they are costs associated with using the market mechanism *per se*.

If this is the distinction Posner cares about, then the crucial question is what follows from it? Why can't we evaluate not only the costs of goods, but the cost of using the market mechanism to sell those goods or the cost of using the economic approach in evaluating moral decisions? It seems that the principal irony of the economic view is that the only thing on earth that we cannot value with a cost-benefit analysis is the cost-benefit analysis.

Of course, this is the position Posner must assume because he has defined the market as morality. It is a move similar to his use of Factor 3 (described earlier); key normative positions are defined as exogenous factors and, as a result, are removed from inspection. As such, Posner has no tools with which to critique the market system morally.⁹¹

But what about the rest of us, can we imagine a series of harms associated with use of the market mechanism in certain areas?

90 Posner, *supra* note 9, at 139.

91 But why wouldn't he assess them economically? As a matter of completeness, one might wonder why an economist dedicated to the economic approach would not wish to include these costs, either as transaction costs or externalities, in the analysis.

C. COSTS OF THE MARKET MECHANISM

One such harm involves the comparison of incommensurable goods, or what Calabresi and Bobbitt have called '*the costs of costing*.'⁹² The theory of incommensurability holds that some goods cannot or should not be measured on the same scale. There are two forms of this claim. The strong form holds that certain types of goods *cannot* be measured on the same scale. Benjamin Barber has argued the strong form in characteristically theatrical language: "Can personal dignity be measured by personal wealth? Is power commensurable with happiness? What is the exchange rate between glory and property?"⁹³ The weak form holds that some goods *should* not be measured on the same scale. Cass Sunstein has argued that "Incommensurability occurs when the relevant goods cannot be aligned along a single metric without doing violence to our considered judgments about how these goods are best characterized."⁹⁴ The single metric usually at issue is money, as Simmel explains, "Money, with all its colorlessness and indifference, becomes the common denominator of all values; irreparably it hollows out the core of things, their individuality, their specific value, and their incomparability."⁹⁵ As Calabresi and Bobbitt put it, "Another, more significant problem with market determinations we shall call the *costs of costing* ... moralisms and the affront to values, for example, of market determinations that say or imply that the value of a life or of some precious activity integral to life is reducible to a money figure."⁹⁶

I believe the strong form of incommensurability is indefensible. We routinely place monetary values on lost life and limb in the tort system, and the market is fully capable of pricing blood, organs, life, babies, and whole humans; we have seen markets function for all of the above.

However, the implications of the weak form are critical, and they reveal a central flaw in the expansion of the economic approach. There seem to be two harms expressed in the above accounts of incommensurability. The first is a *snap-shot* approach; pricing incommensurable goods causes immediate "violence to our considered judgments" or "affront to values." The second is a *longitudinal*

92 GUIDO CALABRESI & PHILIP BOBBITT, TRAGIC CHOICES, 32 (1978).

93 BENJAMIN BARBER, STRONG DEMOCRACY: PARTICIPATORY POLITICS FOR A NEW AGE 203 (1984).

94 CASS R. SUNSTEIN, FREE MARKETS AND SOCIAL JUSTICE 80 (1997).

95 Georg Simmel, *The Metropolis and Mental Life*, in THE SOCIOLOGY OF GEORG SIMMEL 414 (Kurt H. Wolff ed., 1950).

96 CALABRESI AND BOBBITT, *supra* note 92, at 32.

approach. By pricing goods, we not only cause immediate discomfort, but we irreparably hollow out their value. It is not that the market cannot value certain goods; it is that when we use the market to price and distribute certain things, we (1) reduce the value of those goods in our estimation and (2) collapse the many ways we value things into a single, impoverished understanding of value.

This critique applies not only to the market system, but to the other hallmark of the economic approach: the use of the cost-benefit analysis in individual and social decision-making. Michaelson points out that the use of cost-benefit analyses by corporations in toxic regulation represents a shift from an understanding of inviolable principles to calculative behavior. "Cost-benefit risk determination, consequently, shifts toxic regulation from a proxy liability rule to a proxy property rule, and moves the entitlements from the owners of bodies to the producers of toxins."⁹⁷

Needless to say, the Posnerian approach does not allow us to consider the incommensurability critique (in fact, in the paragraphs cited above, he expressly forbids it), because these "costs" flow directly from the proper functioning of the economic approach.

A second, similarly forbidden critique is that choices are not always good; we might call this, after Calabresi and Bobbitt, the cost of choosing. Traditional economic theory assumes that to a rational person, more choice is always better than less, because at the very least you can ignore the extra choices and be back where you started. Psychologically-minded economists have begun to note the point others have long recognized, that choices and options can themselves have negative effects. Bertrand Russell writes:

To begin with, [work] fills a good many hours of the day without the need of deciding what one shall do. Most people, when they are left free to fill their own time according to their own choice, are at a loss to think of anything sufficiently pleasant to be worth doing. And whatever they decide on, they are troubled by the feeling that something else would have been pleasanter...the exercise of choice is itself tiresome.⁹⁸

Yet beyond the mental cost of choice, there is the ethical point: that there are some consensual choices humans should not allow themselves, either because we don't like the social consequences or we

⁹⁷ Jay Michaelson, Note, *Rethinking Regulatory Reform: Toxics, Politics, and Ethics*, 105 Yale L.J. 1919 (1996).

⁹⁸ BERTRAND RUSSELL, *THE CONQUEST OF HAPPINESS* 162 (1996).

don't like what the choice does to us. These might include some of Calabresi and Bobbitt's tragic choices, where a fundamental value is at stake whichever way the decision goes.⁹⁹ Yet they need not be tragic. There is also the folly of allowing trivial decisions that in summation do harm to the chooser – an essential point in many elements of the enhancement discussion we will discuss. This category of ethically-problematic choices also includes individually costless choices that sum to a social harm we dislike. See Posner's example of a baby market leading to differentially priced white and black babies. Yet the strict economic approach does not consider the philosophical implications of these arguments, that the economic method itself may, in some circumstances, not be worth its own price.

The point is this, the economic method, both in its practical application and in its normative foundation, fails to consider an entire set of critiques that implicate its methodology. It may be the case that the economic approach cannot, by its construction, fully assess some of the most important societal values.

Most of the time, Posner is consistent and unflinching in his use of the market as a normative system. He defends a baby market on the grounds that a consensual market transaction has occurred, and as such, two parties are better off without making anyone worse off. He notes, consistent with his principles, that we can reject the more transcendental, immeasurable costs that are not captured in the market transaction. Yet at other moments, Posner seems to slip; in one passage, he notes (without further explanation), "wealth cannot be equated to GNP or any other *actual* pecuniary measure of welfare. A society is not wealthier because of a shift of women from household production into prostitution" (original emphasis).¹⁰⁰ Well, why not? If women shift into prostitution, then under Posner's system, prostitution must be their revealed preference, and the transition is efficient. If we take Posner seriously, we cannot look for immorality in baby sales once the efficient baby market has been established. An efficient sex market is certainly, in Posner's words, 'feasible.'¹⁰¹ If the immorality of selling a baby or a kidney wasn't enough to register on Posner's chart, why would the immorality of selling sex be different? Perhaps I am making too much of this prostitution quote, and Posner was merely trying to suggest that *ceteris paribus*, a money-making venture was not different in kind than a non-monetary endeavor. Yet I cannot help but note that to make his point, Posner needed only to compare a shift of women from household production to the legitimate workforce. His

99 Although for Calabresi and Bobbitt, the emphasis is on choices a society must make.

100 *Id.* at 120.

101 *Id.* at 139.

choice of prostitution as an example suggests that he finds humor, perhaps, in this suggestion. But why? From a purely wealth maximizing approach, the sex trade is ethically indistinct from the regular workplace, just as baby sales were ethically indistinct from car sales. Yet one cannot miss in his tone a certain discounting of prostitution as compared to household production. If this is true, it suggests that perhaps, even in Posner's own intuition, something might be missing from market-defined morality.

The economic approach is coherent and extremely useful. As a descriptive model, it allows us to build predictions of rational behavior that assist us in making law, policy, and business decisions about how to structure society. Yet as a model it is least powerful (and most costly) when dealing with the more intangible, unquantifiable elements of human life, which, as a consequence of their often existential nature, tend to be important, intractable, and (in a highly quantitative methodology) likely to be dismissed. And as a normative system, the poverty of the economic approach is that it is blinded by its own usefulness as a descriptive tool, and as such it ignores its own costs as a prescriptive guide. It transplants the virtues of a market system (efficiency, for one) to nonmarket life, and it does so in a way that writes these values into the definitions of moral action and thus removes them permanently from inspection.¹⁰² Economics may describe, to some extent, how we make decisions, but it does not follow that it should be used as a guide for how we think about our decisions. Humans may act, to a reasonable approximation, as rational utility maximizers, but we may lose something uniquely human when we begin to think of ourselves as such.

There is one response that I must address here. I can imagine Posner or Epstein asking: if the cost-benefit analysis has costs and benefits in given situations, then what do you propose we use to assess when it is appropriate? In other words, am I caught in an infinite logical loop, asking us to question our use of the cost-benefit analysis based on a cost-benefit analysis?

The first answer is that we make these decisions the way humans have always made decisions, long before the economic, calculative approach began invading all spheres of life. That is, by drawing on our emotional range and store of experiences to produce qualitative, emotionally validated "gut" assessments. It is of no consequence that this process might be, at its core, a cost-benefit analysis, nor that it could be modeled as a cost-benefit analysis. What

¹⁰² We saw this for example, in the case of Posner's threshold criteria for evaluating normative systems, *supra* at 6-16, as well as in his definition of the market *as* morality.

matters is that to the decision maker, key values were not monetized or rationalized in ways that diminish their perceived values. It is not difficult to argue that principled or emotionally-felt decision-making can be described in calculative language, or for that matter that rights-based moral philosophy can be described using a utilitarian framework.¹⁰³ What matters here is what the chooser *feels* she is doing,

103 This distinction could be described as that between implicit and explicit costing. I argued that even if they are formally similar, to the decision-maker the two vary dramatically in psychological or moral terms. This same point can be made for another deep split that runs through democratic theory and moral philosophy – namely the distinction between principled and calculative behavior. The two may be functionally similar or even identical, but in terms of moral or psychological meaning to the actor, they are distinct.

Principled behavior is roughly analogous to what is called in moral philosophy *deontological* behavior (*deon* signifying duty), wherein the moral agent abides by categorical principles which remain constant independent of particular circumstances. Kantian moral imperatives, in which rational beings have a duty to universal, unwavering moral laws, exemplify this perspective. Whereas in moral philosophy, deontological laws are often metaphysical in origin, in the principled behavior of, for example, the ideal democratic citizen (who follows the law out of a principled respect for it), the laws are created by individual democracies and make no claims to metaphysical truth.

Calculative behavior is roughly analogous to *teleological* or *consequential* moral reasoning in philosophy. The moral actor makes decisions in this mode in light of a chosen end. Actions are judged in accordance with the end and not the means. Benthamite utilitarianism is a form of this mode of moral reasoning. Importantly, in this analogy the economic utilitarianism of calculative behavior is distinct from the Benthamite utilitarianism of moral philosophy. In Benthamite utilitarianism, the just end is social utility: securing the greatest good for the greatest number. In the economic notion of utilitarianism, an individual rather than societal view is taken, since in economic theory utility cannot be compared across individuals. In economic utilitarianism, the chosen end is each individual maximizing his personal utility.

One can argue that principled and calculative behavior are not necessarily distinct in kind, so long as we limit our view to logical formalism and ignore the effects of the two decision-making processes on the decision-maker. Economically-minded theorists have argued that at heart, the two modes of decision-making are indistinct. If a right (or principle) is something that can never be trumped in a calculation, then a right can be modeled as a good with infinite value (or utility, in the case of utility maximization models). These views focus on the formalistic idea that principled decision-making can be modeled as a subset of calculative decision-making. Thus, a right receives infinite value in a cost-benefit analysis and can never be trumped by other, competing goods.

Long before law and economics, Mill offered a similar integration of principle and calculation in moral philosophy. In *Utilitarianism*, Mill criticized both sides of the divide between two strains of moral reasoning, deontological and teleological. Mill criticized deontologists for casting the rules of justice, which are analogous to our principled behavior, as absolute and inviolable, while he criticized teleologists for failing to see the role of justice in utilitarian calculations (Mill refers here to philosophical utilitarianism, not economic individual utility). Mill argues that when one calculates social utility, certain principles are so essential to this social utility that they arise as seemingly constant trump cards. These actions which in nearly every circumstance win the calculation of social utility over other actions

and what that choice of methodology means for our identities and self-perception as persons.

This does not mean that we reject the economic approach all together. Rather, as I have said, it is incredibly useful for certain types of goods. However, it calls into question the march to spread the *descriptive* economic approach into all areas of life, a march led by Becker and others. And it certainly calls into question the Posnerian *normative* economic approach and its application to matters of non-economic values. Sunstein gives us a guide for this propriety, using our

begin to resemble inviolable principles of justice, but they remain open to those extraordinary, rare circumstances when their transgression improves social utility. “[J]ustice is a name for certain moral requirements which, regarded collectively, stand higher in the scale of social utility, and are therefore of more paramount obligations, than any others, though particular cases may occur in which some other social duty is so important as to overrule any one of the general maxims of justice.” See JOHN STUART MILL, *UTILITARIANISM* 62 (George Sher ed., Hackett 1979) (1861).

In the same Milleian way, the principled approach of democracy could fit within the calculative framework of economics, such that democratic principles are never truly inviolable but rather approximate inviolable principles. Assume that the telos of the democratic actor would not be social utility but living in accordance with the democratic values of his society. Thus, an actor with an ideal valuation of democracy will, in this formulation, respect democratic principles in nearly every situation, but leave open the possibility of rare situations in which principled democratic action conflicts with democratic values. (Some of Lincoln’s actions during the Civil War are cited in this respect).

These two formal resolutions are similar but distinct. The economic resolution suggests that a model of individual calculation can accommodate truly inviolable principles. The Milleian resolution suggests that individual calculation can lead to an *approximation* of inviolable principles. As a descriptive matter, Mill’s solution may be the best account to date of how humans actually make moral decisions in the real world. Normatively, which of the two is more appropriate depends on the conceptual question of whether, in certain instances, a particular democratic ethos is best served by violating a set principle of that democracy. It is beyond the scope of this essay to pursue the matter further here.

However, these resolutions do not capture an essential dimension of the problem, because the analytical integrations of principled and calculative behavior tell us nothing about how the two modes of decision-making affect the decision-maker. What may be indistinct analytically could be wildly distinct in terms of the social, moral, and psychological implications for the chooser. Robert Burt recognizes this point in his work. ROBERT BURT, *DEATH IS THAT MAN TAKING NAMES* (2002). There, he points out that two actions that will functionally achieve the same result, such as terminal sedation and euthanasia, may have very different psychological impacts on the actor. In fact, the idea that the two modes of behavior are fundamentally distinct in moral flavor reaches far back. Tocqueville believed that in his era, there was a “universal collapse” from principled to calculative behavior. He writes: “Do you not see that mores are changing and that the moral conception of rights is being obliterated with them? Do you not notice how on all sides beliefs are giving way to arguments, and feelings to calculations?” See ALEXIS TOCQUEVILLE, *DEMOCRACY IN AMERICA* 239 (J. P. Mayer ed., George Lawrence trans., Harper Perennial 1988).

considered judgments about how the various aspects of our lives are best characterized.

The second answer is that whenever possible we do not force these harmful decisions. If a decision requires the comparison of incommensurate goods that does violence to our norms and values, then to the best of our ability, we should not force these choices as a society when they are not essential. This does not mean that the choice will not come up. Choices are an unavoidable consequence of scarcity, including the scarcity of time, and as such they may never be fully removed from society. Yet we need not, as a society, constantly seek to introduce new choices, whether through technology or otherwise, that force these damaging comparisons and valuations. In other words, in assessing the value of new choices, we must also assess the costs of having the ability to make those choices.

The linkage to genetics is now clear, and so I will move on to the affirmative case. However, the critical point to take out of this section is that the law and economics school packs into its analysis normative assumptions which, in the current moment, we tend to accept without inspection. Usually, this is reasonable, as the assumptions of the economic approach map reasonably well onto our norms and intuitions in many areas of modern life. Yet in the question of genetic enhancement, ignoring these normative assumptions and accepting on its face the analytic framework of law and economics will lead us to overlook some of the most compelling, yet hard to see, consequences of the genetic era.

VI. NOT HUMAN BOUNDARIES, BUT HUMAN ESSENCE

I will now return to the fundamental paradox raised at the beginning of this essay: many of us who reject genetic enhancement intuitively have a difficult time expressing what drives this intuition. Set against the more obvious benefits of genetic enhancement, this makes for a difficult case.

My purpose in this section is to offer one explanation for this intuited harm. I will then argue for a public policy that will capture many of the benefits of genetic science while minimizing its harm.

On one level, Fukuyama got it exactly right. Genetic enhancement has the ability to undermine something fundamentally human. However, Fukuyama erred in three central ways that damaged his case. To summarize:

- First, Fukuyama treated the threat to “humanness” as an instrumental harm and not an intrinsic harm. In other words, his theory gives us no way to understand the harms of genetic enhancement beyond the one narrow, instrumental concern of human boundaries. Yet even Fukuyama’s own writings express a broader set of anxieties, as seen in his discussion of what I termed reductionism.
- Second, Fukuyama’s case was normative rather than descriptive. Fukuyama chose to pursue moral philosophy, and this approach brought a series of technical requirements that proved fatal to Fukuyama’s case. For one, Fukuyama had to identify a trait that was shared by all humans and by no non-humans. As we saw, his later shift to species-typical traits signaled the collapse of this approach. For another, Fukuyama had to defend a prescriptive position as normatively desirable rather than descriptively true. This approach took an essential point and dropped it into the morass of competing philosophies.
- Third, Fukuyama provided an unsatisfactory account of what the human essence at stake *is*. He focused on our complex systems of politics, art, and religion. However, he offered little explanation of (1) why these particular ends are privileged over others, (2) what we should think of humans who don’t pursue or successfully produce such ends, and (3) why enhancement jeopardizes these ends as opposed to *furthering* them.

I will pick up precisely where Fukuyama left off, because I share his driving intuition that genetic enhancement undermines something that is fundamental to being human. However, I will try to avoid the pitfalls which trapped Fukuyama. First, my theory of harm will not be linked to one narrow (albeit important) instrumental concern, such as human rights. As such, it will explain a wider range of the anxieties we feel about genetic enhancement. Second, I will not argue for a normative account of what the essence of human life *ought* to be. Rather, I hope to build a descriptive account of what humans have perceived to be the essence of our lives and what importance such beliefs hold for us. Accordingly, I will not (and need not) show that all humans possess this ‘human essence’. Free from the technocratic nature of moral philosophy, I need only to show that the values at stake are perceived as important by our culture generally – not that all humans and no non-human possess these qualities. Finally, my

argument will attempt to avoid controversial claims over what is important in human life. Where Fukuyama selected certain values to privilege over others, I will attempt to remain agnostic on as many such issues as possible. Instead, I will try to show that in various divergent accounts of the human essence, genetic enhancement works to undermine important components of humanity.

While this approach escapes many of the criticisms Fukuyama faced, it is vulnerable to a different type of critique. If my account is descriptive rather than normative, then I must answer the question: so what if genetic enhancement undermines the human essence? If I am not stating that any particular account is superior *a priori*, then why not let genetic enhancement *change* the description of what it means to be human? Certainly, our view of humanity often changes with scientific understanding and possibility. As Freud noted (in a possible moment of self-congratulation), Copernicus showed us that we are not the center of the universe, Darwin showed us that we are not so different from apes, and Freud showed us that we are not even the masters of our own minds. So how can a descriptive account favor one era of human self-perception over any other?

The answer is this. While I cannot say what view of the human essence is normatively superior, I will argue that descriptively, some views have served us better than others. The criterion I will use is human happiness or well-being, a common definition of what economists describe as individual utility.¹⁰⁴ For some readers, the importance of what it presently means to be human (as described herein) will be self-evident and require no justification. More skeptical readers will be concerned that the “human essence,” much as I noted for intuition earlier, has a fluid and contextual nature.¹⁰⁵ I will try to

104 As defined in MARTIN FELDSTEIN ET AL., PRINCIPLES OF ECONOMICS: THE READINGS/WORKBOOK 10 (1996). Importantly, I am referring to the economist's view of *individual* utility here and not to the philosophy utilitarianism, which is concerned with summing individual utilities into a measure of social utility. That theory suggests not just an end goal (social utility), but also a means of resolving moral dilemmas via a social utility maximization calculus. This theory produces results that I do not wish to suggest or defend. The extent of my argument in this section is to hold up economic utility as a value that even skeptical readers would agree is important, so that I can use this common ground to justify the use of human essence as a central criterion in the enhancement debate. Nothing more is meant to be implied here.

105 Here, it is worth noting that, at first blush, I appear to run into the same problem Posner does with his intuition threshold. The crucial distinction, however, is that I am not arguing for a threshold test as Posner did. In fact, I never stated that intuition should be disregarded completely in evaluating a moral theory. I only argued that intuition was slippery enough (and often wrong enough) that a moral theory's conflict with immediate, unconsidered intuition was not sufficient to disqualify it out of hand. However, in evaluating the direction our sense of meaning

address this concern in three ways. First, whenever there is a major normative controversy over the human essence, I will look to divergent accounts to show that genetic enhancement will be detrimental in each of the branches. Second, I will attempt to situate my account of the human essence in broader historical contexts, which transcend at least our immediate particulars, if not our general Western particulars. There are traditions of discussing what it means to be human that have remained relatively stable over lengths of historical and social contexts, and certain themes recur. Even these accounts may not satisfy the most dedicated postmodernists, though I hope to provide something more durable than, say, our flip-flopping intuitions on in vitro fertilization (IVF). Finally, I will show that the ways in which enhancement undermines these traditional notions of humanity will push us into familiar areas whose consequences on human happiness are well known. Therefore, as a descriptive matter, my account of the human essence and genetic enhancement will attempt to be both value neutral and yet descriptively aware of the consequences for human happiness or well-being.

I would also like to acknowledge and address at the outset a number of easy attacks. First, this is not a religious argument. When I talk about “human essence,” I will look to the major traditions of political thought to ask what it is about humanity that we’ve sought to protect. From this I will derive and defend a descriptive understanding of the human essence as the values we have traditionally defended in society across religious and cultural distinctions. Second, this is not an anti-technology argument. Nothing in this argument diminishes the vast benefits of technology or of genetic science itself. Nor do I argue in Luddite fashion that the only alternative to further innovation is a return to campfires and pitch-tents. What I shall argue for ultimately is a specific public policy norm that charts a guided course through new technology. This norm will express an acute awareness of technology’s benefits – as well as one cost that is hard to measure but destructive to ignore.

A. TWO VIEWS OF HUMAN LIFE

There is a central dichotomy in the way we have thought about what it means to live a human life. In broad strokes, I will attempt to portray this division, knowing that I cannot do justice in this space to the diversity of theories within each category.

has gone, it is crucial to consider and reconsider our intuitions on how well a current theory of meaning is doing in providing the goods meaning would ideally confer.

On one side is classical philosophy. The early philosophers, including Aristotle, were concerned with the moral improvement or perfection of humanity. The focal point of this philosophy was the question of virtue or 'the good life.' Each classical philosopher proposed his own catalogue of virtues; for the purposes of this essay, it is not the contents of the catalogue that matter, but a recognition of the virtue-based system. We might call this the *perfectionist* view of human life.

On the other side of the partition is liberal philosophy. The liberal philosophers, including Kant, sought to remain agnostic on the question of virtue and the good life.¹⁰⁶ Instead, their concern was with individual dignity and freedom. In liberal philosophy, each individual deserves the freedom to pursue a personal conception of the good life.¹⁰⁷ In the strong form expressed by Kant, a liberal society can function without any concern for the virtue of its citizens.¹⁰⁸ We might call this the *liberal* view of human life.

106 Liberal theorists argue that philosophers should not impose a view of virtue or the good life upon others. As Hobbes put it, in a direct swipe at Aristotelian virtue:

Their Moral Philosophy is but a description of their own Passions... what is Honest, and Dishonest; what is Just and Unjust; and generally what is Good, and Evil: whereas they make the Rules of Good, and Bad, by their own Liking, and Disliking: By which means, in so great a diversity of tastes, there is nothing generally agreed on

See THOMAS HOBBS, *LEVIATHAN* 461 (J.C.A. Gaskin ed., Oxford University Press 1996) (1651).

107 This principle was articulated by, among others, John Stuart Mill, who writes: "The only freedom which deserves the name, is that of pursuing our own good in our own way, so long as we do not attempt to deprive others of theirs, or impede their efforts to obtain it." See John Stuart Mill, *On Liberty*, in *UTILITARIANISM, ON LIBERTY, CONSIDERATIONS OF REPRESENTATIVE GOVERNMENT* 81 (Geraint Williams ed., Everyman 1993) (1859).

108 Kant postulates a society in which a "nation of devils" might peacefully coexist. Kant places only one behavioral condition on these devils, namely that they must "possess understanding" or, in other words, be "rational beings." By this he means that they must possess sufficient foresight to realize that in the long run, their personal interests, no matter how antagonistic or self-seeking, are best served not by opposing the liberal democratic system, but by submitting to mutually coercive laws. If this condition is met, the state can function independently of its citizens' virtues or vices:

the constitution must be so designed that, although the citizens are opposed to one another in their private attitudes, these opposing views may inhibit one another in such a way that the public conduct of citizens will be the same as if they did not have such evil attitudes ... such a task does not involve the moral improvement of man; it only means finding out how the mechanism of nature can be applied to men in such a manner that the antagonism of their

Charles Taylor has noted that an exploration of human identity requires us to grapple with these notions of how to live. He writes that in “tracing various strands of our modern notion of what it is to be a human agent, a person, or a self... you can’t get very clear about this without some further understanding of how our pictures of the good have evolved.”¹⁰⁹ The power of this statement is clear when we consider how deeply these seemingly abstract philosophies have been absorbed into our popular conceptions of daily human life and modern society. The Kantian school of individual dignity is the foundation of liberal society and the liberal conception of freedom. We understand in general and imprecise terms that the nature of our freedom is that we may act so long as we do not harm others. On a societal level, liberal laws maximize individual freedom and honor individual choice bounded by consent or non-harm.¹¹⁰ The Aristotelian school of moral perfectionism is the foundation of much modern lawmaking that seeks to incorporate community norms or values into regulations. Aristotelian laws seek to shape character or to legislate morality,

hostile attitudes will make them compel one another to submit to coercive laws, thereby producing a condition of peace.

See Immanuel Kant, *Perpetual Peace*, in *POLITICAL WRITINGS* 112-13 (Hans Reiss ed., H. B. Nisbet trans., Cambridge University Press 1991).

However, there are a number of intermediate positions that bridge the liberal and virtue-based views. Mill, for one, was a liberal who was ultimately concerned with human perfection. In his view, a liberal society – as opposed to an Aristotelian catalogue of virtues – was the best instrument for achieving moral perfection of the human race. Mill predicated his system of liberty on “the permanent interests of man as a progressive being.” See Mill, *On Liberty*, *supra* note 109, at 79. In his recent work, Berkowitz has argued that a well-functioning liberal society *requires* that its citizens internalize a particular catalogue of civil virtues. See PETER BERKOWITZ, *VIRTUE AND THE MAKING OF MODERN LIBERALISM* (Robert P. George ed., 1999).

109 CHARLES TAYLOR, *SOURCES OF THE SELF* 3 (1989).

110 There is some ambiguity in liberalism over whether the limiting principle is harm or non-consent. Mill’s language usually supports a consent-based view. Economists are likely to support a consent view as well, since this mirrors the economic notion of mutual exchange for mutual benefit; the economic assumption of rationality assumes that individuals will consent to actions that increase or maintain their utility level (this is the notion of “revealed preference”). Neoclassical economists generally oppose paternalistic legislation, which presumes that individuals don’t know what is good for them. Neoclassical economists would say that someone who (with full information and normal rationality) consents to be harmed is not truly being harmed. To say otherwise is to impose one’s preferences onto another – a violation of the spirit of strong liberalism and free markets.

Much of the time, the two views, consent and non-harm, would produce the same outcome. Assault, for example, is usually a violation of both. However, the two theories depart on whether one can consent to be harmed; in different instances, the law favors each theory. One can legally consent to assault and be assaulted, as in the case of boxing. Yet the law does not allow individuals to consent to murder and be murdered. However, this tension may simply reflect the observation, stated earlier, that communitarian norms rather than liberal ideals tend to drive much of our law-making.

whether that morality is the political right's valuation of religion or the political left's valuation of social welfare policies.

Both Kantian liberalism and Aristotelian virtue are alive and well, both as theories of state action and as conceptions of who we are as humans and how we ought to spend our lives. They coexist in (sometimes unrecognized) tension, and the same persons will often hold both views in different areas. As Posner has noted, a pure liberalism would require economic and social freedom; yet in our current political spectrum, the conservative right pursues economic freedom and social regulation, while the left pursues social freedom and economic regulation.¹¹¹ In our private lives we balance the impulse to spread our values with the impulse to recognize the plurality of good lives.

Unlike Taylor, I do not wish to endorse one of these views or the other. One may reasonably believe that these views are in conflict, as many in the academic world do. Or one may believe, with equal legitimacy, that each view is correct in its own domain: liberalism tells us how our laws should be, and perfectionism tells us how we ought to conduct our private lives. Likewise, one may believe none of the above.

Instead of arbitrating between perfectionism and liberalism, I wish to recognize the power both hold in contemporary society, in shaping the ways in which we conceive the essence of living a human life. Our perception of the human essence is wrapped up with the existential question, framed by Tolstoy as, "What shall we do, and, how shall we arrange our lives?"¹¹² Perfectionism and liberalism are the two principal answers that our society has produced. That is, either we conceive of ourselves as pursuing the good life as centrally defined by an external source *or* we conceive of ourselves as pursuing our individual conceptions of the good life, private conceptions that have existential value because they are our own. I recognize, descriptively, these two strains of thought in order to make the argument that genetic enhancement fundamentally undermines both accounts.

111 Posner, *An Army of the Willing*, *supra* note 88, at 27-29.

112 Tolstoy *quoted in* Max Weber, *Science as a Vocation*, in FROM MAX WEBER: ESSAYS IN SOCIOLOGY 152-53 (H. H. Gerth & C. Wright Mills trans. and eds., Oxford University Press 1946). There is also the Socratic formulation, "How should one live?" *quoted in* AMARTYA SEN, ON ETHICS & ECONOMICS 2 (1995).

B. THE PERFECTIONIST VIEW

Aristotle is an exemplar of the perfectionist view – the view that the essence of human life is to improve oneself in accordance with a set of externally defined values.

We need not concern ourselves with Aristotle's particular substantive view of the good life.¹¹³ Aristotle presented one influential list of virtues, which includes intelligence, understanding, wisdom, generosity, wit, mildness, and truthfulness.¹¹⁴ Various religions, philosophies, and civic movements have supported alternate ideals for human life. What matters in this essay is not the substance of the catalogue of virtue but the *procedure* of the perfectionist view, namely, how and why living the defined good life is important to our conception of the human essence. We will use Aristotle as a starting point, because his work underlies much of our modern understanding of virtue, as well as a great deal of contemporary perfectionist thought (including, for that matter, most communitarian theory). However, in our inquiry, Aristotle is merely paradigmatic, not dispositive; what matters ultimately is what we as a society have come to accept as the relationship between virtue and the essence of being human.

At first blush, genetic enhancement would seem entirely consistent with the perfectionist view of human life. In this view, the essence of human life is to cultivate in ourselves certain skills, values, and ways of living. Whatever the ideal, if the good life is to achieve that end, then enhancement would seem to be a powerful tool in this direction. Granted, enhancement could be misused, such as if one used enhancement to increase her aggressive tendencies, and this would conflict with the Aristotelian view of virtue. However, this would not be a criticism of enhancement *per se*, but rather with a particular bad application of enhancement. One could imagine a range of enhancements that greatly further the human goal of perfectionism: increased intelligence, athleticism, and musical prowess, moderated aggression, and supplemented artistic, philosophic, and academic creativity. Thus, on first inspection it is difficult to see why enhancement and the virtue-based view of human life are intrinsically in conflict.

113 For reference, Aristotle's view of virtue is when an object performs its natural role excellently. According to Aristotle: "every virtue causes its possessors to be in a good state and to perform their functions well." Thus, for an eye, virtue is seeing well. For a horse, virtue is galloping well. What is virtue for a human? Aristotle argues that it is finding the balanced, golden mean between our natural human extremes in both feeling and action. The virtue "bravery," for example, is the perfected mean between confidence and fear. See ARISTOTLE, NICOMACHEAN ETHICS 42-44, 71 (Terence Irwin ed., Indianapolis, Hackett 1985).

114 See, e.g., ARISTOTLE, *supra* note 113, at Books 4 and 6.

Indeed, we must look deeper to see what gives virtue and accomplishment their conceptual power in the perfectionist view of a “good life.” To this end, we will consider three questions concerning accomplishment in the perfectionist view. In this section, I will refer often to virtue and accomplishment. If we needed to distinguish between these two terms, we might say virtue consists of achieving a valued state, while accomplishment is achieving a valued goal. However, we need not be terribly concerned with distinguishing between the two. What we are basically concerned with is how we evaluate human activity.

The first question is whether we are concerned with the accomplishment of the goal only or with the mental state that accompanies that accomplishment. In other words, is it enough that someone does the right thing, or must she do the right thing for the right reasons in order for us to value the action under the perfectionist model? In a liberal model, the answer is easy – the intent of the liberal actor is irrelevant. As we saw, the liberal system requires only that the actor is rational enough to see that self-interested calculation supports liberal behavior. Yet the question is harder in the Aristotelian view. Simple accomplishment of an ideal may not be enough when the ideal has value as a moral achievement; thus we will look deeper to see if something more matters.

The second question is whether the good life is concerned with only the *end* of achieving the ideal or also with the *means* by which we reach it. Certainly, we can imagine scenarios in which we have placed a high value on the means used to achieve a goal. For instance, we do not respect (as a matter of law or common moral evaluation) one who gains wealth through fraud. However, the answer becomes blurrier when we consider more subtle interactions between means and ends, such as when one achieves peace between two warring parties through fraud. On the far other end, we have seen scenarios where we allow, for example, anti-democratic means for the preservation of democracy in extraordinary circumstances.¹¹⁵ Again, the means-ends question is easier in liberalism. With the exception of the basic conditions of consent (no fraud, no duress, etc.) neither the ends nor the means are matters of public concern. But in the case of perfectionism, we must again look more closely to see what animates the human appreciation of virtue.

The final question is whether we care about objective or subjective perfectionism. In an objective view, we are all measured by a single standard – the highest test score, the most touchdowns, the

115 Lincoln’s actions during the Civil War are often cited as an example of democratic ends justifying anti-democratic means in exceptional circumstances.

prettiest voice, and so on. In a subjective view, we are measured by the degree to which we fulfill our own potential for accomplishing a given end. The two views are each present in our conception of human accomplishment. We are objective at times, comparing, say, the great opera singers or the great basketball stars against a common metric for their respective skill. Here, our concern is absolute achievement, without concern for the starting conditions or various disparate obstacles faced by the individuals. Yet in other domains we are subjective, measuring a person's success not only by her end point, but by her starting point, initial allotment of talents, and the difficulty of the path chosen. We would not, for example, judge our child's voice recital against Pavarotti to declare it a failure.

I am not suggesting that these three factors provide a complete, mathematical account of human accomplishment. My purpose is only to demonstrate the range of possible understandings of virtue within a perfectionist model of human life. Furthermore, these three variables function independently of one another, and they have different significances in different contexts (we might imagine scenarios in which the intent of an act matters to us, but the means do not, or vice versa). Additionally, the distinction between subjective and objective accomplishment underlies many tremendous philosophical debates, and I do not wish to drag us into those here.¹¹⁶ Rather, our focus is a description of common understandings of human accomplishment – an attempt to understand what we value and why we do so.

These caveats aside, I will now present two distinct views of human accomplishment, each of which is possible under the framework presented above. Regarding those three questions, if we answer that we are concerned with (1) the action and not the intent, (2) the end product and not the means, and (3) objective accomplishment, then we have a wholly *product-oriented* view of accomplishment. The product-oriented view is concerned only with the outcomes of human action. Each act is measured on a common scale against all other individuals, without concern for the context of the accomplishment or the factors behind it. If we answer instead that we are concerned with (1) the intent as well as the action, (2) the means as well as the ends, and (3) subjective accomplishment, then we have a wholly *process-oriented* view of accomplishment. This view still requires that we assess

116 For example, debates on distributive justice ask whether we ought to reward one's objective output (the view held by pure normative neoclassical economics) or one's subjective output (the view held by egalitarian redistributionists like Romer, who wish to normalize reimbursements to reward what one does relative to one's natural abilities and advantages). All of this is irrelevant here, where we consider only descriptively what animates our views on virtue in daily life. No concern is given in this essay for the fascinating and all-devouring issues of distributive justice.

the outcome (this is true by definition, since we are talking about accomplishment), but the standard that measures accomplishment is itself dependent on the nature of the actor and the action.

Of course, these three variables are independent, and we could present more than two models of accomplishment even in this simplified framework. Yet these are reasonably polar views, what we might call ideal types, and so we can ask which of these two understandings is more in line with the perfectionist view of human life. That is, which is consistent with the view that links human accomplishment to our understanding of virtue and living a good human life?

1. THE ARISTOTELIAN VIEW OF ACCOMPLISHMENT AND VIRTUE

Aristotle takes a particular view on this issue. For accomplishment to constitute virtue in his account, the act must be deeply process-oriented – even as we strive towards an objective ideal. Aristotle writes, “By virtue I mean virtue of character...[having these feelings] at the right times, about the right things, towards the right people, for the right end, and in the right way, is the intermediate and best condition, and this is proper to virtue.”¹¹⁷ Aristotle’s phrase “for the right end” is a requirement for proper intent. For example, in the section on bravery, Aristotle writes, “The brave person’s motive is crucial.”¹¹⁸ Aristotle imagines scenarios in which an action appears brave, yet the virtue of bravery is absent because the actor’s intentions work against the value. He notes that one who treads ‘bravely’ into death to avoid another harm, such as poverty or pain, is not brave, because “such a person stands firm [in the face of death] to avoid an evil, not because it is fine.”¹¹⁹

Similarly, Aristotle’s phrase ‘in the right way’ introduces a requirement for proper *means*. It not enough that one achieves the right end-state; she must do so in the right manner for the accomplishment to constitute virtue. Aristotle hints at what this virtuous methodology might be:

[W]hat is true of crafts is not true of virtues. For the products of a craft determine by their own character whether they have been produced well; and so it suffices

117 ARISTOTLE, *supra* note 113, at 44.

118 *Id.* at 74.

119 *Id.*

that they are in the right state when they have been produced. But for actions expressing virtue to be done temperately or justly [and hence well] it does not suffice that they are themselves in the right state. Rather, the agent must also be in the right state when he does them. First, he must know [that he is doing virtuous actions]; second, he must decide on them, and decide on them for themselves; and, third, he must also do them from a firm and unchanging state.¹²⁰

As a side note, we can see from this passage that *craft* is Aristotle's word for goods that are properly valued in a product-oriented fashion. Yet the main point is that Aristotelian virtue requires the actor's mental state to meet three requirements: understanding, choice, and consistency. Understanding is the weakest requirement, as the actor needs only to be conscious of what she is doing. Choice and consistency are more important to Aristotle.

Aristotle describes choice, or voluntary action, as a "precondition of virtue."¹²¹ For Aristotle, voluntary action is necessary for moral responsibility and moral credit, or as Aristotle puts it for "praise or blame."¹²² The 'firm and unchanging state' is a requirement that the actor *decide* on a virtuous action and *maintain* the virtuous state that inspired the good action.

Implicit in both the choice and consistency requirements is the notion of struggle, and struggle is indeed an important element in Aristotelian virtue. Aristotle has defined virtue in a reasonably intuitive way. Namely, in the range of natural human tendencies, virtue is the midpoint between two vices: excess and deficiency. For example, temperance is the virtuous mean between enjoying too much pleasure and too little. Friendliness is the virtuous mean between being ingratiating and rude. Since we are often naturally pulled in one or both directions away from the mean, virtue is difficult to achieve. Aristotle writes, "Hence it is hard work to be excellent, since in each case it is hard work to find what is intermediate ..."¹²³

The critical point is that in the Aristotelian model, struggle is not merely a description of virtue (i.e., 'virtue is hard to achieve'). Rather, it is one element of what makes virtuous action virtuous. On this point, Aristotle writes,

120 *Id.* at 39-40.

121 *Id.* at 53.

122 *Id.*

123 *Id.* at 51.

[N]ot everyone, but only one who knows, finds the midpoint in a circle. So also getting angry, or giving and spending money, is easy and anyone can do it; but doing it to the right person, in the right amount, at the right time, for the right end, and in the right way is no longer easy, nor can everyone do it. Hence, [doing these things] well is rare, praiseworthy, and fine.¹²⁴

On the third question, Aristotle suggests an objective rather than subjective approach. In other words, Aristotle proposes that virtue arises from pursuing an objective ideal in a deeply process-oriented way. As we have seen, Aristotle's particular view concerns the mean between extreme positions ("Virtue, then, is a mean, in so far as it aims at what is intermediate").¹²⁵ The objectivity of his view is subtle, because Aristotle also notes that in a certain respect, the mean is relative to each individual and is not measured by a common scale. He writes that "relative to us the intermediate is what is neither superfluous nor deficient; this is not one, and is not the same for everyone."¹²⁶ Thus, the amount of food that is temperate for one person is not necessarily temperate for another, based on their build and metabolism. Yet the ultimate goal is *not* simply a midpoint between the individual's two natural extremes. Aristotle does not leave it at this wholly subjective account, perhaps because it would allow for the outcome that a devil was as 'virtuous' as a saint, provided the devil reached the mean of his skewed, morally monstrous scale. Instead, the ultimate goal is an objectively defined value, and it is the individual expression of this value that is subjective. For example, if temperance is the objective value, then drinking three glasses of wine instead of six is the subjective expression of this value for a particular (highly alcohol-tolerant) person. On the question of what defines the objective catalogue of values, Aristotle tells us, "The excellent person is the standard."¹²⁷ I won't pursue that further, since, as I stated before, it is not any particular catalogue that concerns us here, but the methodology.

Thus, we have a coalescing picture of Aristotelian virtue. It isn't doing the right thing for the wrong reasons. Nor is it acting without knowing, acting under duress, or acting in a brief flash of goodness. Aristotelian virtue involves cultivating a good character, with reference to an objectively defined set of virtues. We cultivate this good character by fighting our extreme impulses and habituating ourselves towards a mean state that consistently generates good actions. Proper

124 *Id.*

125 *Id.* at 44.

126 *Id.* at 43.

127 *Id.* at 65.

intent and method, including choice and consistency, are necessary components of this virtue. Aristotelian virtue, then, is about process and product, and living the good life is a narrative process of cultivating objective virtue in oneself.

2. AN ALTERNATE VIEW OF ACCOMPLISHMENT AND VIRTUE

Given that my investigation is descriptive, not prescriptive, the question now is how well does the Aristotelian account describe our perfectionist views? The answer, I believe, is that the Aristotelian model of virtue is deeply engrained in our culture, yet it is not a complete account. Certainly, Western religious traditions contain a large amount of Aristotelian-style thinking – from the Torah to the New Testament to the Koran, we are used to objective ideals that must be sought through highly scrutinized intent and method, often with a narrative view of struggle, cultivation, and mastery.

However, in our secular culture, it is my hunch that the Aristotelian account represents one major stripe of modern thought. For while we care about process, we can also care about cold results, and while we care about objective scales, we are also often subjective in our valuations. These various combinations of product and process seem to form a dynamic tension, a sort of contrapuntal relationship. And, I will argue, it is through this dynamic tension that we find our understanding of accomplishment and value in human life.

Furthermore, these two models of accomplishment hold varying power in different areas of human life. Say that a formerly illiterate adult teaches herself to read and write on a fifth grade level, and then writes a short story. A parent, spouse, or friend is likely to value this accomplishment very highly – it would be a cause for celebration and joy. However, a literary agent might not share this enthusiasm, at least in her professional capacity. And this is a critical point: she might value the accomplishment deeply as a human being who observes a fellow human being's struggle and personal triumph. Yet as a professional literary critic, she would not value the story for publication in comparison to stories by more talented writers. Similarly, when we hire a painter to paint our house, if it comes out peeling and splotchy, we do not care that the painter maximized her individual potential, nor that her work ethic was superior to some other masterful painter. The same is true for a person convicted of a crime. When someone of reasonable mental capacity commits a crime, we don't interpret the 'badness' of the act subjectively, in relation to

the individual's capacity for restraint. No thief goes free just because, relative to what he is capable of, the action is fairly tame.¹²⁸ Granted, we still allow process-oriented concerns in certain instances (self-defense, diminished capacity, duress, necessity, etc.), but these are special cases that highlight the general spirit of product-orientation over process-orientation in criminal law. The two views may intertwine, as in the case of a student who studied an unprecedented amount to raise a failing grade with a near perfect final exam. Some teachers might only consider the final numerical average, while others might feel a pull to take effort into account. Thus, the larger point is clear: in certain relationships in human life, we employ different combinations of subjective versus objective and process versus product valuation.

Can we identify a common theme in the relationships that favor objective product over subjective process? Our examples above had at least one factor in common. In each, we expected someone else to *do* something for us. These were the cases in which we relied on another human being to meet some mark such as painting our house, entertaining us with a good short story, or not harming us with violent crime. Since expectations were set between and among individuals, objective standards came into play. We might call these areas, which stir product-oriented evaluations, *instrumental* relationships.

Similarly, there is at least one theme for the relationships that favored a subjective view of accomplishment. In each example, the nature of the accomplishment was not for the benefit of another person, but for the betterment of the actor towards a valued goal. For the newly literate writer, we value the writing of the story not for its objective merit, but for what it communicates about the individual and her personal trajectory. We might call these areas, which stir process-oriented evaluations, *personal* relationships.¹²⁹

This dichotomy also helps to explain, at least in part, why certain activities generate a tension in us between product- and

128 Yet even in this area, where the product-oriented view dominates, there is room for process-oriented concerns. Mental capacity and *mens rea* requirements impose a process-oriented limitation on the product-oriented thrust. Additionally, the self-defense, duress, and necessity defenses also provide process-oriented exceptions to the dominantly product-oriented flavor of criminal law.

129 I considered using the term *spheres* rather than relationships, but *spheres* tends to erroneously suggest that these modes of evaluation belong to separate, mutually exclusive areas of human activity. Quite to the contrary (as we shall see), one action can involve both types of relationships, and so an act may be valued in both the instrumental and personal, product and process senses. *Spheres* suggests mutual exclusivity, and it fails to capture how these different types of relationships can tangle together to create the distinctly human mode of valuing activity.

process-oriented evaluations. For the newly literate writer, in the personal relationship, her accomplishment is great, yet in the instrumental relationships of literature it is minor (though we could state that her accomplishment has great objective value in the social sense as an example to others).

There is a second thematic dichotomy that can help us explain these two competing modes of evaluation. In each of the product-oriented examples, our relationship with the actor was presumptively anonymous, or at the most, professional. We started, in one example, with the idea of a painter hired to paint a house and then claimed that she would be held to a product-oriented view of the results. However, this presupposed a business-like relationship. If we add to the story that the painter is our best friend, or our mother, then the picture becomes more complicated. We may still have product-oriented leanings, to be sure, but these will be pulled in the process-oriented direction as a result of the friendship or family relationship. We may still be upset over bad outcomes, but we will be more likely to consider subjective factors of effort, intent, means, maximization of potential, and the like. In the case of the anonymous painter, such factors are less likely to have pull.

These two dichotomies (*instrumental* versus *personal*, and *anonymous* versus *familial*) work together to explain our distinctly human view of virtue. In the anonymous, instrumental domain, the product-oriented view tends to dominate. These are areas in which we want results, and within a range of reasonable circumstances, results and not subjective factors matter most in our evaluation. In the familial, personal domain, the process-oriented view tends to dominate. A principal example of anonymous, instrumental life is the market of modern capitalism, and accordingly, the product view dominates process within wide boundaries (while fraud, duress, and the like serve as minimal process-oriented bars in a dominantly product-oriented arena). A principal example of personal, familial life is the family or close community. In general, the anonymous, instrumental mode is most used in systems, while the personal, familial mode is most used in the social domain of emotional, personal relationships.

Importantly, the product and process views are not just a description of *what* we value in different relationships. They are also explanations of *why* we value what we do, when we do. Here, a return to Aristotle is instructive. Aristotle argued that an essential part of what makes virtue honorable and praiseworthy is that it is difficult to achieve. Struggle is a core component of Aristotle's view. He distinguishes objectively measured accomplishment (what he calls *craft*) from his view of virtue, because virtue cares about *who* did the

act, *how*, and *why*. In my account, in the personal, familial parts of human life we also care about who, how, and why, because we care about the person doing the act. Whichever model is more descriptively true, they share one thing in common, an essential element of the human view of virtue is its role in the narrative of the actor's life. We imagine people as *given*, and then we see what they do with themselves and with their lives – and we evaluate accordingly.¹³⁰ In the domain of personal, familial relationships, what makes human accomplishment special is not simply its end result, or its comparison to the accomplishments of others. Rather, what truly makes it special (in popular perception) is that the person we care about did it, given who they are. This explains Aristotle's concern for choice, consistency, struggle, and habituation – his account of virtue takes the lifespan as a whole and imagines the purpose of being human is to perfect oneself and accomplish over time, through hard work and discipline. This narrative view also explains my account of competing relationships; it is in the personal, familial arena, where people care about us *as people*, that the process view matters most. In other words, the process-oriented view is not merely a description of *what* we value in the personal relationships; it is a description of *why* we value what we do.

This move is essential to the argument. If process and product were just descriptions of *how* we value certain activities, then a critic could say that we needn't care if we lose one or the other methods of valuation. We could just use the other. This argument does not take the day, however, because as a descriptive matter, product and process also explain *why* we value what we do. Of course we value, say, our children for their product-oriented accomplishment, but if we could value them *only* for product, something distinctly human would be missing from the relationship. Similarly, we can value an employee for process, yet if we could value him *only* for process, something distinctly human would be missing from this relationship as well. In other words, product is a necessary element of value in anonymous, instrumental relationships. Process is a necessary element of value in personal, familial relationships. In human life, product and process are the *sources* of our valuations as well as the measuring stick. If we eliminated the product or process type of virtue, we would undermine a necessary element of the human method of understanding our lives.

130 I don't wish to cause confusion here. My account of virtue does not map precisely onto that of Aristotle. As we have seen, I believe that we are often *more* process-oriented than Aristotle on the objective-subjective question, yet we are often *less* process-oriented on the means and intent questions. The point here is that both accounts share something in common: when process-orientation matters, it does so because we conceive of virtue as being in part a narrative and a personal event.

The critical point is that I have described two views of human virtue, one Aristotelian and the other my own account of dynamic tension between process and product. I believe that we can identify strains of both views in our society. Yet importantly, what we have *not* seen is a strong, generally-accepted human view that a *wholly* objective, product-oriented accomplishment captures the complete essence of human life. Only the strong normative economic view (articulated by Posner) equates moral worth with outcomes alone (in his case, market outcomes). Even still, it is not clear that Posner would argue that this, as a descriptive matter, is all that we care about in our lives. Yet we can remain agnostic on that issue for now. I will return to the economic view later to consider its interactions with my own view.

3. GENETICS AND THE ARISTOTELIAN VIEW

Now, how does genetic enhancement interact with our human understanding of virtue and accomplishment? From the outset, I will stipulate that genetic enhancement is consistent with a wholly product-oriented view of accomplishment. Enhancement has the potential, in the best case scenario, to increase objective outcomes by increasing the talents and abilities of individuals. Stipulating this is proper, because I wish to grant enhancement its strongest case.

However, while enhancement facilitates product-oriented accomplishment, it undermines essential elements of the process-orientation, in both the Aristotelian account and in my account of dynamic tension between product and process. It does so in four ways: by undermining choice, struggle, consistency, and givenness.

In the Aristotelian account, we value an objective accomplishment when the actor does it in the right way. The right way involves understanding the action, choosing the action, cultivating the stable state that gives rise to the action, and overcoming the human inclinations and limitations that make the action difficult. Taken together, these concepts generate an understanding of accomplishment in which the good life is, in large part, the effort of making ourselves good.

When we use genetic enhancement to achieve virtue or accomplishment, we undermine the Aristotelian features that give the accomplishments their meaning to us. For example, let's take bravery as a typical virtue. What does it mean to have bravery when bravery is implanted? Is it still admirable? There are, of course, only a very few people who feel nothing but bravery in dangerous situations. The vast

majority of humans feel the Aristotelian push and pull when they face danger, between self-preservation and heroism, between cowardice and glory. Bravery, for Aristotle, is struggling against those extremes to achieve bravery in the right way. The person who is born feeling nothing but bravery in all situations is of course not a bad person, and objectively she may be the most brave. And yet she lacks a uniquely human component of virtue, the conscious and difficult overcoming of vice. What genetic enhancement does is raise all enhanced individuals to the level of the blindly brave person. Objective bravery is thus achieved, but at the expense of the narrative, life-span view of human bravery, which relies on understanding, choice, cultivation, and the all-to-human potential for failure. When we genetically enhance our children prior to their birth, we rob them of the opportunity to *choose* to do the right thing – or to *struggle* against their undesired impulses in a way that makes the ultimate accomplishment meaningful to us.

The same is true when we genetically enhance ourselves. With enhancement we achieve an end not through struggle but with the ease of one selecting an item from a menu – it is the difference between cooking a meal and ordering in. The purchased meal might taste better objectively, but it is not *ours*, and in not working for it, we lose the sense of ownership and accomplishment. Though trivial in the case of ordering in one's dining, the same logic becomes powerful in the case of ordering in one's identity.

However, seeing the Aristotelian harms of self-modification is a bit trickier than in the case of future children, because self-modification presents the *appearance* of choice and struggle. With self-modification, we *choose* the modification – that is, we select to have the trait in question, and in a way, this is like Aristotelian choice, because we are choosing to possess an admired trait. Yet something is missing here. Though we *choose* to genetically enhance the good trait, what we are actually doing is robbing ourselves of the choice to do that action in the difficult moment. It is comparable to tying one's hands before a conflict, rather than doing the right thing at the right time. We would not confuse a prenuptial agreement with marital trust. Trust requires doing the right thing in the moment, when tensions pull us towards greed, whereas signing the prenuptial constitutes, on the other hand, making the decision before the tensions and problems arise. Functionally, they achieve the same result. But only one of these do we generally consider virtue.

Similarly, the struggle involved with genetic enhancement is a step removed from Aristotelian struggle in a way that eliminates the necessary conditions for Aristotelian accomplishment. We may struggle to make the money to purchase bravery or intelligence or athletic skill, and this may make us appreciate it as something we

earned. In the same way we might appreciate a car that we saved for more than one that was given to us. Yet again, something is missing, for struggling to earn the money to purchase an accomplishment is distinct from struggling to cultivate oneself to achieve the accomplishment. In the human view of accomplishment, we tend to distinguish between the person who struggles to defend her family in a dangerous moment and the person who struggled to earn the money that allowed her to hire a bodyguard to defend her family. Functionally, they both achieve the same result. But only one is captured in the Aristotelian understanding of virtue as a struggle to cultivate the good action in oneself.

For both future children and ourselves, enhancement also presents the illusion of consistency. What unaltered human could ever match the consistency of mood, impulse, and action offered by genetic enhancement (or for that matter psychotropic medications or biotechnological alternations)? The star athlete may wrestle with laziness or love of junk food, but the genetically enhanced will benefit from permanent fixes to our constitution – laziness reduced, love of junk food diminished – so that the athlete can better focus on the athletic task. And even if these changes were subject to fluctuation, they could be tuned up externally as needed. We might imagine, for example, monthly or yearly trips to genetic enhancement clinics, where re-delivery of preferred genotypes is performed.

Yet again, if we look closely at why consistency matters in the first place to Aristotle (and to the many worldviews that echo his view of accomplishment), we see that something is missing from genetically enhanced consistency. Consistency – what Aristotle called ‘a firm and unchanging state’ – is perhaps his most surprising requirement, because his account is so wrapped up with struggle and choice. Yet the tension resolves when we realize that consistency is the *goal* of struggle and choice. Aristotle does not imagine the good life as a series of sporadic flashes of virtue, eked out of viceful, distemperate individuals just when the moment requires. Rather, the goal is consistency – cultivating a self that wants to make the right decisions all of the time. This relationship between, on the one hand, struggle and choice, and on the other, consistency, is the basis of Aristotle’s narrative, habituation view of the good life – living well means struggling to make ourselves better, i.e., more consistently good. Put differently, struggle and choice are necessary elements of virtue’s worth, and yet struggle and choice have a trajectory – they are goods not in the abstract, but in the pursuit of consistent virtue. For that reason, reaching consistency through enhancement once again grabs the goal while sidestepping the path to the goal that gave it value in our eyes.

Aristotle's particular view of virtue involves objective ends, whose value is derived in part from process-oriented means. As we have seen, genetic enhancement has the power to achieve our ends while sacrificing the means that gave them value.

4. GENETICS AND THE DYNAMIC TENSION VIEW

Now we can turn to an alternative view of human accomplishment, the account of dynamic tension between product and process. What distinguished this view from Aristotle's is the belief that in different types of relationships in human life, we favor different modes of understanding virtue and accomplishment – and that in each type of relationship, one of these views is a necessary element of our valuation of an action. It is the push and pull between these competing views that gives human evaluation its distinctive essence. We would always evaluate a machine or a tool on purely objective, product-oriented grounds, but only in the wholly anonymous, wholly instrumental relationships of human life do we evaluate other people as such.

Genetic enhancement plays a similar role in this view of accomplishment. It sacrifices the subjective, process-oriented approach for the objective, product-oriented approach to accomplishment. As such, it benefits human action in our anonymous, instrumental relationships, while robbing human action of its core source of value in our personal, familial relationships.

When we value things in the wholly personal or familial sense, we tend to care about the actor, her intent, her means, her struggle, her context, her potential, and how much of it she met. As I stated before, these are ideal types, and in reality product and process intertwine. A wife may expect an alcoholic husband to meet very objective criteria, and past a certain threshold of patience and compassion she may resort to objective, product-oriented evaluation (the proverbial shape up or ship out). But at the same time, process-orientation holds sway within a fairly wide bandwidth of familial and personal life; most parents would appreciate the fact that their C- daughter struggled to earn a B+ just as much (or more) than the A+ from her sister who never lifts a finger. The point here is not that any one of these modes is the *only* way we value things in a given relationship. Rather, it is that in our more emotional, caring, and person-focused relationships, the process-oriented view is a necessary element of the way we value things humanly.

What happens when genetic enhancement enters the picture? Let's return to the example of bravery. In a blindly objective view, all we care about is the absolute level of bravery. Yet if we allow ourselves the tiniest hint of process-orientation (that is, considering the individual as well as the act), genetic enhancement affects that process-oriented portion, however large or small. For example, when bravery is natural, we can say in the more objective view: she was *born* brave, and that is an admirable trait. Or, in the more subjective case, we can say she was born cowardly, but she faced her fears and became braver, and *that* is admirable. But when bravery is implanted, what is the most we can say? She was *designed* by humans to be brave, and that is admirable. But is it admirable for her? Do we value her for it? Can she value herself for it? For any action that has even a tincture of process-orientation, enhancement diminishes that process component.

Now, as a logical matter, there shouldn't be a difference between someone being born brave and someone being designed to be brave, since both actions are outside the individual's control. And yet as a descriptive matter, the two scenarios do not seem to have the same resonance in our valuations. This suggests that there is something to the idea of *givenness* – whether by genetic accident or metaphysical explanation, the unknowable sequence of events that gives rise to each individual imbues the individual, in popular perception, with an endogenous, natural identity. In a different context, Owen Fiss has described the power of what I have called here *givenness*; he writes of “the ideal of treating people as ‘individuals’ – recognizing each person’s unique position in time and space, his unique combination of talent, ability, and character, and his particular conduct. The pervasiveness of this ideal in society cannot be denied.”¹³¹ As a result of the power of givenness in our sense of identity and individuality, natural skills have, in our perception, a role as a component of identity, while comparable but implanted skills do not.

This ties directly into our notion of valuing human action. Thus in sports, for example, we value the naturally gifted athlete, but not the athlete who takes steroids. Somehow, the natural genetic lottery is fair, because it makes us who we are; at the same time, steroids are unfair, because they alter who we are. We can practice, lift weights, run laps, and train in all sorts of ways, because this is maximizing our natural self. But enhancement, whether through steroids today or genetics tomorrow, is seen differently: as *shifting* our set potential rather than *maximizing* it. And that, in the most common views, compromises our given identity – it changes who we are. We could run the same analysis for intelligence or attractiveness and achieve the same result.

131 Fiss, *supra* note 15, at 107.

Part of the human notion of process-oriented evaluation is the idea of taking one's self and maximizing one's potential, the colloquial doing the best with the hand that's dealt. We might wish that we were born with better looks, or more physical coordination, or more intelligence. We might curse God or genetics for not granting this to us. Yet the moment an improvement is made from the outside – implanted in us – there is the sense that something in the whole of the self has been invaded.

Thus, both the enhanced and unenhanced person can accomplish or fail relative to their starting point, which is their initial distribution of talents and predispositions. But in the enhanced case, the starting point lacks something special that we feel in the unenhanced starting point: givenness, or identity, or self. A tool is not given; it is crafted. And when a tool performs well, we say it was well-crafted, and when it performs poorly, we say it was poorly crafted – but we praise or blame the toolmaker, not the tool itself. When a person is crafted, they take on some of the features of a tool. Their accomplishments are no longer their own, because inside them is a tool that has been implanted. At most, they can be praised for using the tool well, and if they fail, we can blame the tool or their use of it. But in success or failure, they are, in a sense, beholden to the tool inside them, and their actions are never fully *theirs*.

The essential point, however, is that process-orientation requires that the actions be *theirs*. When the athlete on steroids does poorly, we no longer say, "Well, he did the best he could with what he had, and so we're proud of him." And when the athlete on steroids succeeds, our pride is tainted as well; because the success is attributable in part to the steroids, we can no longer say, "*He* did it." Even if this element of success was complemented by hard work and intense training, the victory remains easy to measure by objective product, yet still harder to appreciate by subjective process, because the win feels largely attributable to the tool-like element of the person. Thus, as the balance shifts from subjective process to objective product, our valuations of the act shift from issues of context and narrative to issues of win/loss. In the presence of enhancement, it feels more natural to appraise things in the mode consistent with anonymous, instrumental relationships, rather than personal, familial relationships.

The steroid story is analogous to self-enhancement of the genetic sort. If we explore the concept of enhancement of future children, there is an additional element of shifting from person to tool, process to product. When our child maximizes his potential yet fails a math test, we appreciate him because of who he is, knowing he did the best he could. Yet when our other child, genetically enhanced to excel

in math and science, fails the math and science test, there is something new, a sense that she did not do what she was *supposed* to do – what she was *designed* to do. This is complementary to the effect above, in which the actor could no longer claim traditional ownership over his act. Now, we can feel that the individual has a *telos*, or purpose, that is not her own, yet is implanted inside her.¹³² Together, these two effects give a sense of the tool-like qualities of the genetically enhanced individual.

What we are left with, then, is that enhancement shifts our natural mode of valuing one another in the personal, familial sphere away from process-orientation and towards product-orientation. In the presence of enhancement, the only mode that makes sense is one that takes into account the tool-like, machine-like elements of being enhanced. And this means, within our personal, familial relationships, a greater reliance on the objective and product-oriented measures that have come to characterize our anonymous, instrumental relations. What effects this might have on human happiness I will leave up to the reader to decide. But of course it is my personal intuition that we feel most *human* when we are valued in the personal, familial way, and not in the anonymous, instrumental way. We might enjoy our moments of objective, product-oriented success, to be sure, but to have that as our dominant means of being perceived by others, in even our most personal and familial relations, seems to me like a loss of something uniquely human.

5. OBJECTIONS TO THE ARGUMENT AND RESPONSES

What are the objections to this argument? One response is “good riddance” to our popular view of the given self. A critic might argue in this vein that the distinction between natural and unnatural – between steroids and given ability – is arbitrary, or even unfair to the less able. As such, we would be (according to this view) wrong, or at best foolish, to believe in the given self. In my continuing attempt to remain as neutral as possible on difficult normative issues, I will again demur on that point. My response will be instead, to note as I have, that our process-oriented view is a crucial component of our human

132 C.S. Lewis noted this effect of genetic engineering: “In reality, of course, if any one age really attains, by eugenics and scientific education, the power to make its descendants what it pleases, all men who live after it are the patients of that power. They are weaker, not stronger: for though we may have put wonderful machines in their hands we have preordained how they are to use them.” C.S. LEWIS, *THE ABOLITION OF MAN* 70 (1947).

perception of personal, familial relationships, and that our process-oriented view *depends* on a notion of givenness. Therefore, the notion may or may not be arbitrary, as the critic claims, but tearing it down means tearing down a deep notion of how we value human life in the perfectionist view. And what we are left with – a more tool-like, machine-like way of valuing each other in even our personal, emotional lives – has not seemed to be sufficient for human happiness.

A second objection is that choice and struggle are not always good things. We could imagine scenarios where ‘robbing’ someone of their choice or struggle is okay, or even wonderful. For example, eliminating someone’s desire for pedophilia or eliminating extreme struggle (say, out of horrific poverty) would be excellent. Yet within the reasonable bandwidth of normal human activity, eliminating choice and struggle is to eliminate the felt source of value in our actions – even as we are better able to achieve our ends. Therefore, we need a mechanism to balance these competing goods. This is exactly what I hope to provide in the final section of this essay, when I discuss the distinction between therapy and enhancement.

A third objection is that struggle and choice will always be present, even if we enhance ourselves to a higher level of objective potential. This will not always be true, because, as we have seen, some goods (like bravery) express themselves simply in having them. However, to grant this point its due, one may still have to work towards other goods; e.g., enhanced intelligence will simply allow the individual to struggle towards higher intellectual accomplishments than before, but she would still have struggle and choice. Yet this is where the concept of givenness shows its full force. The human belief in givenness means that our starting point is not arbitrary. As such, it is not choice and struggle *per se* that we value, but the choice and struggle of individuals as an expression of their natural, given selves working to be the best they can. I won’t repeat the analysis found above, in which I considered the effects of a loss of givenness on human evaluation (and ultimately human happiness), but rather I will point to it as a response to this sort of critique.

In fact, the interaction between choice, struggle, and givenness is a response to a fourth critique: that these two views of human accomplishment above are themselves arbitrary, incomplete, or otherwise unsatisfactory. These two views are presented only as descriptive accounts of how we value human activity. We examine them as components of the perfectionist view, should the reader choose to take this branch at the normative split between perfectionism and liberalism (or, as I noted before, if the reader believes both are essential parts of human life). However, these accounts of accomplishment and virtue are not presented as mathematical

theories; they are merely helpful descriptions of something very complex, and there may be other (more?) satisfactory accounts. Yet the notions of choice, struggle, consistency, and givenness, in the way they were used above, appear to flow through most understandings of human life, not only as descriptions of human activity but as explanations of its meaning. And they interact in ways that extend beyond these particularized accounts. There is a notion of givenness implicit in Aristotle, though he does not dwell on it. There is a notion of choice and struggle in my account, though I focus more on product and process. These concepts are bound up in much literature and art exploring being human, and I would describe them as organic concepts. That is, difficult to describe and pin down for neat analyses such as these – and yet we try to do so, to put forth a written response to the economic account of things. It would be interesting to see how one might argue that the loss of choice, givenness, and struggle would be anything other than a loss of something distinctly human.

6. SUMMARY OF THE PERFECTIONIST ACCOUNT

Under the perfectionist view of human life, we have studied two methods of valuing human activity. We have seen that in each, genetic enhancement furthers one aspect of accomplishment while undermining the other; while a goal is apparently achieved, a necessary element of its meaning is stripped away. In the Aristotelian view, genetic enhancement undermines choice, consistency, and struggle. In the dynamic tension view, genetic enhancement undermines givenness and the valuation of personal, familial activity. In both, the conclusion is that apparent goals are furthered, yet in subtle ways, the elements that made those goals meaningful to us as humans are diminished.

C. THE LIBERAL VIEW

The other side of the normative division is liberalism. In this view, we make no external claims about virtue, accomplishment, or the good life. Instead, the essence of human life is to pursue one's personal vision of the good life, based on one's own goals, preferences, and desires. Within a reasonable bandwidth, we do not compare or rank these individual views against each other. Rather, we design a system in which each person has the maximum freedom to pursue her own life goals, consistent with that same freedom for others.

Of course, while I am treating perfectionism and liberalism as separate for analytical purposes, it is worth noting the overlaps. For example, within liberalism, individuals still may seek to accomplish their own personally-defined goals and virtues. And so all the problems of genetic enhancement undermining human achievement and virtue can plague the liberal actor as well. Yet the liberal view of the human essence has its own unique features, and here I wish to show that they too are undermined by genetic enhancement.

Once again, at first blush, genetic enhancement would seem entirely consistent with this view of human life. If the essence of human life is to pursue one's individual desires, then genetic enhancement could be seen as a powerful tool in this direction. If freedom is about pursuit of ends, pursuit of happiness, or even self-expression and self-actualization, then why shouldn't people use genetic enhancement to feel what they want to feel and do the things they want to do? Wouldn't this be liberty realized, as we are finally freed from the constraints of our natural constitutions? Genetic enhancement does nothing if not expand our set of choices.

However, once again we must look deeper to see what gives liberalism its conceptual power in our view of the human essence. Like the perfectionist view, the liberal view is deeply engrained in our society and our conception of human life. Liberalism reveals a great deal about our beliefs of what is valuable in human life, and so we can ask, what do we really care about here? What leads us to a liberal system? What are we trying to protect?

1. TWO VIEWS OF LIBERALISM

The obvious answer is liberty, but that begs the question of why we care about liberty. What is liberty intended to protect?

There are at least two answers to this question, and they give rise to two different views of liberalism – what I will call here *dignitary* and *contractual* liberalism.

The first answer is that we protect individuals because we believe there is something special about each person. This is the dignity-based view, and it is the one Fukuyama relies on in his work regarding Factor X. Kant's moral theory is a primary example of the dignitary view. In Kant's work, every rational being has dignity and, as such, should not be used (solely) as a tool for someone else's benefit. This notion of dignity is written into Kant's famous moralism: "*Act so that you use humanity, as much in your own person as in the person of*

every other, always at the same time as end and never merely as means" (original emphasis).¹³³ The view runs deep in our current understanding of liberalism, providing a conceptual, secular basis for such familiar concepts as equality, liberty, and rights. I will call this the *dignitary* view of liberalism, because what is at stake (and what is protected by the liberal system) is equal human dignity.

The second answer is that we value our own individual ability to live well, and so we make a deal with society, along the lines of 'I will accept limitations on my own actions towards others, so that others will similarly leave me alone.' Hobbes describes the motivations that lead rational, self-interested beings into restrictive social contracts. "The Passions that encline men to Peace, are Feare of Death, Desire of such things as are necessary to commodious living; and a Hope by their Industry to obtain them."¹³⁴ Locke explains how this leads to government, "the great and chief end therefore of men uniting into commonwealths and putting themselves under government...is the mutual preservation of their lives, liberties, and estates."¹³⁵ Of course, this view and the dignitary view are not *necessarily* at odds. Locke believed in both natural rights *and* the strategic value of forming a state. Yet in the extreme form of this view, one need not believe in the equality, dignity, or rights of all people; one need only see that it is in her self-interest to join the commonwealth. This is what Tocqueville called having "the sense to sacrifice some...private interests to save the rest."¹³⁶ Thus, I will call this the *contractual* view of liberalism, because what is at stake (and what is protected by the liberal system) is securing our individual ability to live our lives as we please.

In their extreme versions, these two views of liberalism serve as ideal types. In the former, we value the pursuit of *all* life-plans; in the latter, we value the pursuit of our *personal* life-plan. We will consider the effects of genetic enhancement on both.

2. DIGNITARY LIBERALISM

What animates the dignitary view? To answer this, we will consider two questions: (1) what do we mean by dignity, and (2) what

133 KANT, *supra* note 7, at 47.

134 HOBBS, *supra* note 106, at 90.

135 JOHN LOCKE, THE SECOND TREATISE OF GOVERNMENT 66 (C. B. Macpherson ed., Hackett Publishing Company 1980) (1690). Note that while Locke includes a right to material property in the state of nature, other liberals do not. Hobbes argues that the motivation for the movement from nature into civil society is a universal desire for peace. See HOBBS, *supra* note 108, at 90.

136 TOCQUEVILLE, *supra* note 103, at 527.

exactly about human life are we trying to protect with dignitary liberalism?

(a) DIGNITY DEFINED

Dignity is a deeply-engrained idea with two main understandings, one religious and one secular. In religious views, the source of dignity is the divine entity of the particular religion (e.g., humans have dignity because God invested them with dignity).

In secular form, the theory of dignity flows in large part from the influential moral writings of Kant, and so we can look there for hints on what we mean, in a secular sense, by dignity.

In his *Groundwork for the Metaphysics of Morals*, Kant suggests at least three related ideas explaining dignity: pricelessness, incommensurability, and intrinsic worth. Kant writes, “In the realm of ends everything has either a **price** or a **dignity**. What has a price is such that something else can also be put in its place as its *equivalent*; by contrast, that which is elevated above all price, and admits of no equivalent, has a dignity” (original emphasis).¹³⁷ Thus, Kant sees a relationship between pricelessness and incommensurability. Something has dignity because it has no equivalent; i.e., is not readily interchangeable or replaceable in our eyes. Similarly, it is the kind of good we would not price, because having a price means having an exchange value among other goods, and this belies the incomparability of the good. As I stated in the section on economics, we need not believe that a good *cannot* be priced for it to have dignity; rather, we can follow Sunstein and say that something is incommensurable when we cannot price it without “doing violence to our considered judgments about how these goods are best characterized.”¹³⁸ Thus, we resist pricing, for example, babies, because (1) this causes immediate violence to our moral beliefs, and (2) in the long run it may actually diminish the value we assign to babies by eroding their perceived incommensurability. Kant notes this distinction between *cannot* and *should not* (though many who follow his writings don’t); Kant does not speak of what *cannot* be priced, but rather “what is elevated above all price.”

Kant’s third related concept explaining dignity is intrinsic worth. He writes, “that which constitutes the condition under which alone something can be an end in itself does not have merely a relative

137 KANT, *supra* note 7, at 52.

138 SUNSTEIN, *supra* note 94, at 80.

worth, i.e., a price, but rather an inner worth, i.e., dignity.”¹³⁹ Thus, inner worth (or dignity) results, according to Kant, from something being an end in itself. If something meets this criterion, then it is worthy of moral protection. Here, dignity is something that is not *merely* instrumental, but is also inherently valuable. Kant is not so naive as to argue that some values are wholly intrinsic. Even humans, he notes, must often act as means for one another. Thus, Kant writes that humans cannot be used *merely* as means. Since people have dignity, we value them not only for what they do for us, but also because they *are* people.

Taken together, these factors present a picture of dignity that maps well onto our popular understanding. Something has dignity when it is priceless, unique (and not interchangeable), and has inner value (and not just relative or instrumental worth). Thus, a human being would qualify, but a precious diamond would not. A diamond is expensive, but we can price it without doing violence to our common morals. A diamond may be unique in the sense of its cut or sentimental value, but we would not say that it is irreplaceable in the way a person is. Finally, we love a diamond because of what it *does* for us (echoes love, signals wealth, delivers beauty) – but ultimately an unloved, unwealthy, unbeautiful person still merits dignity.

This is a negative definition of dignity, yet it comports with popular understanding that we conceive dignity not by what it is, but why what it is not – something with dignity is *not* priced, is *not* interchangeable, is *not* just a tool, etc. Fukuyama set out on a quest for a positive definition, but this is not the goal here. As a descriptive matter, we understand dignity to be a special negative category of valuation meriting special protective treatment. Through this analysis of Kant, we have a better sense of what the features of that negative category are.

(b) WHAT ARE WE TRYING TO PROTECT?

Now that we have a working sense of what dignity is we can determine what the dignitary liberal system values. The easy answer is dignity, but this begs the question: dignity of what? The next easy answer is dignity of people. This is true, but what is it about people that we are honoring when we support the liberal system? If we press a little harder on the issue, we will see that there are actually two distinct possibilities.

139 KANT, *supra* note 7, at 53.

In liberalism we respect each person's plan for their own life. The entire structure of the system is designed to give individuals the liberty to pursue the life of their choosing. We are each allowed to answer the question: how do I want to spend my time?

This freedom of ends-pursuit is a distinctly liberal feature. In the perfectionist view, we are perfectly happy to tell people sorry, your view of the good life is not as good as my view, and accordingly, I am going to impose a set of values (whether from the political left or right) that you must follow. In the liberal view, such ranking and imposition is forbidden. We internalize the notion that there is something special – something worth protecting – about people pursuing their ends, whatever those ends may be. So what is it about ends-pursuit that we value?

There are two potential answers to this question.

The first answer I refer to as the *preference-based* view of dignitary liberalism. In the preference-based view, we decide, normatively, that people deserve dignity because they are people. Then, after this determination, we note that individuals have traits, inclinations, and personalities, which lead to preferences about what they want to do with their time. We don't concern ourselves with the nature or source of those preferences. We only note that most everyone has them, and they serve as a means of increasing each individual's happiness. Because we value humans, we protect the individual's ability to pursue their preferences. Thus, the preference-based view involves an *instrumental* respect for preferences.

The second answer I refer to as the *identity-based* view. In the identity-based view we note similarly that people have preferences, but here the nature and origin of those preferences are of interest to us – not because we care about what the preferences are, but because in this view of human life, having preferences is more than just an instrumental good. It is an explanation of what is special about being human.¹⁴⁰ Here, a review of Fiss's quote on identity may be helpful; Fiss writes about "the ideal of treating people as 'individuals' – recognizing each person's unique position in time and space, his

140 This is not to say that having preferences is a necessary condition for liberal protection. The preference-view is concerned with protecting people, not preferences, and preferences receive only instrumental protection. In the identity view, people and preferences have intrinsic value. This is not a functional difference, since both views lead to the dignity liberal system. Yet it is a difference in what motivates us to this end. Since the distinction is 'people not preferences' versus 'people and preferences' there is thus a core valuation of humanity present in both views – and therefore a core level of protection that would be afforded to all persons regardless of whether they have preferences.

unique combination of talent, ability, and character, and his particular conduct.”¹⁴¹ Previously, we focused on ‘talent’ and ‘ability’, but now we are interested in the power of the unique combination of ‘character’ and ‘conduct,’ as well as something Fiss didn’t mention, but probably would agree to include – the person’s natural wants, aims, preferences, or *desires*. In this identity-based view, we respect individual preferences because they bundle together to create the particular individual, a unique identity in time and space who wants to *be* something or feels that they *are* something – whatever that something is. Thus, in this view, we respect preferences (1) because they can lead to happiness, but *also* (2) because, in and of themselves, there is something we value about people *having* preferences. The identity-based view perceives both an *instrumental* and *intrinsic* component of value for preferences.

The principal difference between the two views is where the boundary of dignity stops. This is not a functional difference, since we know both views lead to dignitary liberalism; rather, it is a difference in what we *feel* we are protecting about human life. In the preference-based view, it is people, not their preferences, that have dignity and thus merit respect and protection. We also protect their preferences, but only *because* they lead to the dignitary human’s happiness, and as such they have instrumental, as opposed to inner, value. In the identity-based view, it is people *and* their preferences that have dignity and inner value, because the two are bound up together into a dignitary whole. Thus, when we protect preferences in this view, it is for both instrumental and intrinsic reasons.

This is a fine distinction, and if it seems like a bizarre one, it is because, at this point in time, no technology has ever forced us to choose between the two views.¹⁴² I now hope to show that genetic enhancement will do exactly that, at a cost to our perception of the human essence.

141 Fiss, *supra* note 15, at 107.

142 As bizarre as this distinction (between a person and her preferences) may seem, it is worth pointing out that large swaths of liberal metaphysics, from Kant to Rawls, seek to imagine the person as distinct from her particular identity, character, aims, talents, etc., for the purposes of understanding justice. What is left, in theory, is the rational core, and this rationality is (in this view) objective and universally constant – it will come to the same answers as all other objectively rational beings. See, e.g., JOHN RAWLS, A THEORY OF JUSTICE 136-37 (1995).

3. DIGNITARY LIBERALISM AND GENETIC ENHANCEMENT

Genetic enhancement will allow us to control and alter key elements of how we feel, what we want, and what we are inclined and able to do. In order to deliver these desired traits, inclinations, and personalities, we will have to distinguish them and separate them into distinct items. We will have to produce them, label them, and – if we treat them as we do nearly all goods in our society – price them so that markets can distribute them efficiently.

Thus, along at least three axes, enhancement will alter the way we perceive our traits, inclinations, and personalities. They will go from priceless to priced, from incommensurable to commensurable, and from intrinsic to instrumental value. The first two changes are easier to see. The pricing mechanism will be applied because individuals will be able to select their traits or the traits of their children, and we will have to pay someone to manufacture and deliver those traits. Some traits will be more difficult to produce and deliver or will be perceived as more desirable; as such, they will cost more in a market environment. Commensurability is a result of price specifically but also choice generally. Having the ability to choose our traits and identities (rather than having them be a given part of us in the way Fiss describes) allows us to make comparisons between competing traits, and they thus become exchangeable, tradable, and rankable in a way given identities are generally not within the liberal framework. Finally, the instrumentality of enhanced traits is the most difficult to see, because we may seem to value the purchased traits, inclinations, or personalities for themselves. Sometimes, a purchased element will clearly be a tool towards an end and thus instrumental (we might purchase physical strength or aggression in order to become a pro-wrestler, for example). Yet sometimes we might purchase a trait, inclination, or personality that we believe is valuable in and of itself. This has the initial appearance of intrinsic value, yet it seems, by analogy, more akin to purchasing a beautiful piece of art or the aforementioned precious diamond than to a given element of personality. In a sense, we value the art intrinsically and do not wish to ‘use’ it for anything else. Yet its ‘intrinsic’ value comes from what it does for us, and not from the fact it is a part of a dignified whole (as given traits were). We would not say it had dignity in the sense humans have dignity, nor would we say it is a component of our dignity, in the way we might of formative traits.

Accordingly, genetic enhancement triggers a shift on precisely the three traits associated with secular dignity.¹⁴³ One consequence is that genetic enhancement requires us to adopt the preference-based – rather than the identity-based – view of dignitary liberalism. We still believe that the individual has dignity, and we still support the same system to protect that dignity. The difference is that the umbrella of dignity has drawn inward, leaving preferences outside its scope. We still may value them instrumentally, as acts of individual freedom to pursue happiness, but we can no longer feel that they are direct elements of our individual dignity. In other words, the identity-view of dignitary liberalism would no longer be possible.

4. CONSEQUENCES OF THE SHIFT TO THE PREFERENCE-BASED VIEW

We have seen that in a world with common genetic enhancement, the only view of ourselves that would make sense is the preference-based view. By undermining the features that gave identity its conceptual power with respect to dignity, we automatically went from two possible views of the human essence under dignity to one.

Is this an even trade or are there consequences to this change?

Let's start with an assumption and then test it. At least some human preferences are more commonly valued, as a descriptive matter, by the *identity-based* view than the *preference-based* view. For instance, a person might feel that her desire to buy a new shirt is not part of her identity. She might then believe that the preference-view is fully explanatory of her actions in this instance. She has dignity, and while her desire to buy a shirt is not in itself a part of her dignity, it is an act of freedom which is merited by her dignitary status. Yet the same person might feel that her choice of a spouse, or the time she spends with her children, or her lifelong passion for the practice of law, might in fact be more than preferences comparable to desiring a new shirt; rather, these actions are characterized as part of her identity and thus a component of her dignitary whole. They are an explanation of who she *is*. These preferences have the qualities we associate with dignity: pricelessness, incommensurability, and inner value. Rather than "preferences," she might feel more comfortable using words like

143 And while this is not a religious paper (and a religious scholar could do a much better job than I describing the theological implications of enhancement), it is worth noting, at the very least: if the source of religious dignity is the divine entity, then making traits manmade instead of divine-in-source would seem to work against that view of dignity as well.

identity, passions, hobbies, loves, goals, dreams, and aspirations for these parts of her life.

We might be able to describe her actions and choices using the language of preferences, labeling each action she takes (towards a shirt, a child, a career) as such and then plotting trade-offs, quantities, etc. Yet she would not use these terms herself, because they do not capture the fullness or importance of those sorts of elements of her life. Thus, the preference-based view is not so much functionally different as *emotionally* different. A preference is a colder, more compartmentalized description of the same phenomenon. Disentangling the whole of identity into the units of preferences makes great sense for modeling behavior and charting diminishing marginal utility and indifference curves. Yet this preference-based view belies the full flavor of the identity-based understanding of ourselves and our human essence.

If this rings true, then we might conclude that yes, the identity-based view of dignitary liberalism is a better descriptor of at least some aspects of our life – and these, as components of identity, would be the aspects we considered most important or meaningful.

If this is so, then the transition forced by genetic enhancement from identity to preference would not be a neutral process. It would come with a cost to our view of the human essence. If the preference-view fails to capture the fullness of our traits, inclinations, and personalities, then an action which undermines the identity-view and leaves only the preference-view must, logically, represent a thinning of our conception of the human essence.

What happens when something that is traditionally valued in terms of dignity is changed to something priceable, commensurable, and instrumental? As we have seen, there may be an affront to our immediate moral intuitions, but more importantly, there is a collapse in the way we are able to value privileged human goods that may reflect a diminution in our sources of value or meaning over time. We have already seen the incommensurability theorists and their view of pricing in other respects; these included Kant, Calabresi and Bobbitt, Sunstein, and Simmel. We can briefly recall Simmel's words, "Money, with all its colorlessness and indifference, becomes the common denominator of all values; irreparably it hollows out the core of things, their individuality, their specific value, and their incomparability."¹⁴⁴

We can even situate this transition into a larger process to better understand the historical scope of what genetic enhancement means for the human essence. Max Weber was perhaps the most

¹⁴⁴ Simmel, *supra* note 95, at 414.

famous observer of a process he called rationalization or disenchantment. In his view, the Enlightenment and modernity brought with it a downside; our progress, in science and economics especially, was inconsistent with the feelings of transcendental meaning people had previously found in life. The more we knew, the more the world lost its magic and significance. In Weber's words:

The fate of our times is characterized by rationalization and intellectualization and, above all, by the 'disenchantment of the world.' Precisely the ultimate and most sublime values have retreated from public life either into the transcendental realm of mystic life or into the brotherliness of direct and personal human relations.¹⁴⁵

By rationalization, Weber meant, among other things, the intellectualization, analytic dissection, routinization, compartmentalization, and bureaucratization of formerly mysterious, transcendental wholes. Such a view is present in the transition from the Native American view of land – as something whole, with which people had a spiritual relationship – to the contemporary understanding of something that is divided, owned, bought, and sold. In Weber's view, our enchanted, transcendental sorts of feelings took refuge in the few places that seemed resistant to rationalization, such as intimate human relationships and art.

It is not accidental that our greatest art is intimate and not monumental, nor is it accidental that today only within the smallest and intimate circles, in personal human situations, in *pianissimo*, that something is pulsating that corresponds to the prophetic *pnuema*, which in former times swept through the great communities like a firebrand, welding them together.¹⁴⁶

Yet Weber noted that even these areas were slowly giving way.

The only thing that is strange is the method that is now followed: the spheres of the irrational, the only spheres that intellectualism has not yet touched, are now raised into consciousness and put under its lens. For in practice this is where the modern intellectualist form of romantic irrationalism leads. The method of emancipation from

¹⁴⁵ Weber, *supra* note 112, at 155.

¹⁴⁶ *Id.*

intellectualism may well bring about the very opposite of what those who take to it conceive as its goal.¹⁴⁷

Weber imagines, as a final consequence, a world in which we have mastered everything, and in the process stripped all areas of human endeavor of their vital sources of meaning, of emotional and cultural values. This final human he describes as a nullity, writing, “for of the last stage of this cultural development, it might well be truly said: ‘Specialists without spirit, sensualists without heart; this nullity imagines that it has attained a level of civilization never before achieved.’”¹⁴⁸

The analogies to our present inquiry are fairly clear. Genetic enhancement can be seen as, among other things, the Weberian disenchantment of our given identities. In the same way that land was transformed from something whole and given, with its own sanctity, emotional significance, and even dignity, into something priceable, divisible, wholly usable, and tradable, enhancement disenchanters our identities, carving our traits, personalities, and inclinations into components available for purchase and sale. The question is not whether one view is right or wrong, or whether the idea of given land or given identities is arbitrary or not. The question for Weber was, what effect does this process have on people’s feelings about their lives? He traced the felt loss of meaning in his era to these grand transitions. And he noted the continuing direction of rationalization into the last refuges of enchantment: the intimate and personal relationships of love and friendship. Yet genetic enhancement takes the Weberian process farther than even Weber suggested – into the rationalization and disenchantment of our selves.

The early philosophical writings of Marx suggest another consequence of the shift from identity to preference, particularly for the case of genetically enhanced children.¹⁴⁹ Marx, of course, was concerned about the labor market. He argues that a central cause of human unhappiness is the laborer’s alienation from his work, as the result of becoming a “cog” in a larger production process rather than a self-sufficient, co-owner of the labor process. This results in the

¹⁴⁷ *Id.* at 143.

¹⁴⁸ MAX WEBER, *THE PROTESTANT ETHIC AND THE SPIRIT OF CAPITALISM* 182 (Talcott Parsons trans., Routledge 1996).

¹⁴⁹ To be clear, a reference to the philosophical observations of Marx does not suggest an approval of his economic prescriptions, such as they were, nor the brutalities that were done in later communist regimes. I wish to be very explicit about this, since this essay seeks to balance praising market economics in its proper domains with criticizing its particular effects in particular uses. Mine is a highly specific argument, and I do not wish for it to get carelessly bound up with Marx’s ideas simply because he is referenced on an unrelated, philosophical point.

“concept of *alienated labor* – i.e., of *alienated* man, of estranged labor, of estranged life, of *estranged* man.”¹⁵⁰ The source of this unhappiness is due to the loss of autonomy: the worker “degrades himself to the role of a mere means, and becomes the plaything of alien powers.”¹⁵¹

We don’t need to support Marx’s economic views to appreciate the insights of this idea. In fact, we can acknowledge the complete awfulness of communist regimes in practice and still note that the idea of workers feeling deeply alienated and soulless in their work is a familiar modern image, particularly for the most powerless workers in the most routinized jobs.

Marx’s analysis raises, by analogy, a dramatic question for the genetic enhancement of children. Marx was worried about alienation in the labor market, a fear premised on his view of the importance of work in human life. Yet in the case of genetic enhancement of children, what would be at stake is the child’s alienation from his own *self*. Knowing that he has been designed by his parents to have certain talents, traits, personalities, moods, and inclinations, the question is, what will his relationship be to himself? Will he be able to feel that these traits are part of his identity, now that they have lost the givenness, naturalness, incommensurability, and pricelessness of the identity-based view? Or will he feel that he has become, in Marx’s words, “the plaything of alien powers” – and not in the labor market, but in his own being? C. S. Lewis echoed this exact theme on the subject of genetic engineering. He argued that genetically engineering one’s children was a form of slavery.¹⁵²

In the topic of this essay, Kant’s loss of dignity, Sunstein’s and Calabresi’s loss of incommensurability, Weber’s disenchantment, Marx’s alienation, and C. S. Lewis’s slavery are each consequences of the transition from a dual view of dignity (identity and preference) to a singular view of dignity as preference satisfaction. Genetic enhancement is the cause of this transition. In the dignitary view of liberalism, the system is designed to protect something we find valuable about our human essence: the traits, inclinations, personalities, desires, and aspirations that sum to constitute our given selves. And once again, genetic enhancement seems to bring us more of what we respect – liberty and choice – at the expense of the fundamental human values that animated our love of liberty and choice in the first place. What is gone is a strong notion of identity and

150 Karl Marx, *Economic and Philosophic Manuscripts of 1844*, in THE MARX-ENGELS READER 79 (Robert C. Tucker ed., 2nd ed. 1978).

151 Karl Marx *On the Jewish Question*, in THE MARX-ENGELS READER 34 (Robert C. Tucker ed., 2nd ed. 1978).

152 See LEWIS, *supra* note 132.

self-actualization; what is left is pure preference-satisfaction, a sort of protected consumerism.

5. CONTRACTUAL LIBERALISM AND GENETIC ENHANCEMENT

The contractual liberal does not enter the liberal state out of a sense of universal human dignity. Rather, she enters to protect herself by joining a covenant for mutual protection.

Nevertheless, most contractual liberals will still be harmed in the ways I have described above, because the ideas of dignity and accomplishment commonly function *within* the contractual liberal's life. For instance, the contractual liberal may not recognize dignity in *all* human beings, but she will often find dignity in elements of her own life – in herself, her family, her community, etc. In fact, it might be respect for this dignity, and a desire to protect it, that compels her into the liberal contract. Thus, the elimination of dignity as a source of meaning and value will harm this contractual liberal, even though she does not believe in global human dignity.

Similarly, many contractual liberals will find value and meaning in their accomplishments and virtues. Again, a diminution of these values will affect the contractual liberal. Even if she follows the liberal model and rejects a universal notion of excellence or virtue, the contractual liberal may want to accomplish things in her own life, measured against her own standards. Thus, the harms we have seen for the classical perfectionist and dignitary liberal will apply to the contractual liberal who believes in *personal* dignity or accomplishment.

However, we must also consider the contractual liberal who does not believe in dignity or humanistic accomplishment as sources of value or meaning. I will refer to this actor as the *minimal contractual liberal*. The first thing to note is that the minimal contractual liberal is already living in the harmed state I have described in this essay, stripped of the fundamental sources of value that have informed human life. However, I will consider here whether the minimal contractual liberal still has something left to lose in the face of genetic enhancement. Doing so requires a consideration of what motivates the minimal contractual liberal in the first place.

Hobbes gives us a hint of what drives the minimal contractual liberal to enter the liberal state. He writes, "The passions that encline men to Peace, are Feare of Death; Desire of such things as are necessary to commodious living; and a Hope by their Industry to

obtain them.”¹⁵³ Thus, we see two motivations; the first is fear of death and pain. This is the most basic form of raw liberalism, where the individual enters the liberal state simply to avoid the anarchic, brutal state of nature. The second motivation is the drive to *experience* a commodious life. In other words, Hobbes’ two motivations for the minimal contractual liberal are (1) preserving one’s life, and (2) filling one’s life with the desired experiences.

The pursuit of commodious experience plays a central role in most human life, but it takes on heightened importance to the minimal contractual liberal, who lives in the absence of the other sources of meaning we have considered. Once again, at first blush, enhancement would seem to further the goal of experience. Enhancement could increase our ability to perceive external experiences, boosting our senses of taste, feel, sight, etc. Additionally, enhancement could introduce us to desired states when they do not occur spontaneously from external stimuli (inducing, for example, our perceptions of love, happiness, and passion, for a lifetime or for a particular target).

However, once again the apparent benefits of enhancement are called into question by a closer inspection of the desired good – in this case, experience. The notion of a human life motivated by the drive for desired experiences is actually quite broad; it can map onto at least two very different philosophies. For instance, experience is the core of existentialism, a philosophy that holds, loosely, that our personal experiences are the only things we can draw significance from in an otherwise random and meaningless universe. Experience is also the core of hedonism, a philosophy that places the experience of pleasure as the highest goal of life.

From the examples of hedonism and existentialism, we can distinguish two different types of experience. The first, consistent with hedonism, is experience as sensory perception. When we eat a pie in pursuit of pleasure, it is the sensory perception of the taste, sight, and smell of the pie that yields the experiential value. We might ask if this view of experience sufficient for the existentialist. If it is, then the two views collapse into hedonism. Yet it seems that there is something additional that many existentialists find in experience, beyond the sensory perception of the event. The existentialist does not believe in higher meaning of a religious or secular nature. She often feels alone in the universe and believes the universe to be random, purposeless, and ethically irrational. Yet there is often a romance to the existentialist that distinguishes her from the total nihilist; she derives what meaning she can from a view of life as a narrative experience. As such, for her the sole source of human meaning is the sum of the experiences she

153 See HOBBS *supra* note 106, at 86.

collects over a lifetime, her relationships, travels, observations, interactions, etc.

This view adds a new element to experience. It is not just *perceiving* the experience as a sensory event that matters; rather, there is value derived from the fact that the existentialist has done the thing that yields the experience. This is the core of Nozick's insight that "we want to *do* certain things, and not just have the experience of doing them."¹⁵⁴ For an experience to transcend pure hedonism and yield this additional, existential value, it must connect the experiencer to her world, letting her find something she perceives as real and authentic to hold onto. Thus, the existentialist can find some meaning in the universe from a natural and spontaneous rush of love for another person, or from an unplanned moment of joy. Yet when these experiences are reduced to their chemical nature and highlighted as artificial, induced or purchased sensations, the experience loses its realness – thus, the existential dimension is gone, and the experience collapses into a purely sensory one.

Unlike Nozick, I will not take a position on which sort of experience is superior or morally worthy. For the purposes of this essay, it is enough to note that many, or most, of the minimal contractual liberals may find some meaning in the existentialist view of the world. Enhancement, when used to enhance or create experiences, is inconsistent with this view of experience. Thus, the minimal contractual liberal who engages in genetic enhancement is left with only one form of experience available, that of sensory perception. Enhancement has reduced what little source of meaning the minimal contractual liberal had available to begin with.

D. SUMMARY OF THE AFFIRMATIVE CASE

One way to summarize what we have done here is to note that virtue is the study of our human ends, while liberalism is the study of our human means. As we have seen, this is generally true but not complete. Virtue requires a certain set of means to give its ends value, and liberalism requires a certain set of ends to preserve the value of its means. These two views inform the basic shape, content, and boundaries of human life in contemporary society; they are the fundamental reflections of what we value in human life, and they exist in tension, with different combinations influencing each of us differently.

154 Robert Nozick, ANARCHY, STATE, AND UTOPIA 43 (1974).

Yet the crucial conclusion is this: genetic enhancement undermines both liberalism and perfectionism in specific but subtle ways – and it does so under the appearance of furthering each system's values. Perfectionism is concerned with human accomplishment, and on first blush, genetic enhancement seems to increase the possibility of human accomplishment. Liberalism is concerned with human freedom and self-definition, and on first blush, genetic enhancement seems to increase both. Yet we have seen that there is – functioning under the radar of these surface benefits – a systemic dismantling of what gives liberalism and virtue their conceptual power in human life. Enhancement hollows out human accomplishment and virtue, increasing the accomplishment but stripping it of what animates our valuation of the accomplishment in the first place. And enhancement hollows out the human dignity through which we find worth in our lives as we pursue our personal views of the good life. Thus, virtue is reduced to instrumentalism or machine-ism, while self-actualization is reduced to hedonism.

This, I believe, takes us a long way towards solving the puzzle posed at the outset of the essay, and it is the explanation of our difficulty in seeing the solution: genetic enhancement tempts us by appearing to benefit the things it destroys.

E. THE POSTMODERN RESPONSE

Fukuyama opened himself to a central vulnerability when he premised his case on one particular, and particularly controversial, normative view of humanity.

I have tried to avoid this same vulnerability by taking us through various descriptive conceptions of the human essence, showing that in each, genetic enhancement conflicts with the values of that account (and its sources of meaning and satisfaction for our lives). This may satisfy a wide range of people who were skeptical of Fukuyama's particular stance but who are willing to agree that one or more of these views captures reasonably well the bulk of what we value about being human. They may find their own sense of being human in one or more of these accounts, and they might also find the effects of genetic enhancement on those conceptions sufficiently destructive to seek a policy remedy against enhancement.

However, there is one class of critics who may not be satisfied even by this approach, because to them, *any* view of the human essence is false and deserves to be discarded. Thus, in this

postmodernist view, if genetic enhancement destroys all views of the human essence, the response might be, good riddance. In the words of Jane Flax, "Postmodernists wish to destroy all essentialist conceptions of human being or nature.... In fact, Man is a social, historical, or linguistic artifact, not a noumenal or transcendental Being....Man is forever caught in the web of fictive meaning, in chains of signification, in which the subject is merely another position in language."¹⁵⁵

If one truly accepts these postmodernism ideas, then, if they are consistent in their beliefs, they will not find fault with genetic enhancement. Quite the contrary, genetic enhancement could be seen as the ultimate realization of postmodern ends (or anti-ends, as the case may be) – individuals are now freed not only from the 'domination' of tradition, history, reason, and language, but also from that of biology and nature.

There are a number of responses to the postmodern critique of my approach. The first is to note that as a descriptive matter, postmodernism is followed in full by a very few people. This says nothing about its substantive merits, but it serves as a reminder that we are concerned with what is descriptively, not prescriptively, true of the human sense of meaning. Even in academia, postmodernism's influence is waning, largely due to the fact that its fundamental tenets quickly limit what one can say about anything. As Benhabib puts it, "Once we have detranscendentalized, contextualized, historicized, genderized the subject of knowledge, the context inquiry, and even the methods of justification, what remains of a philosophy?"¹⁵⁶ Yet even if we grant postmodernism its strongest case – that philosophy is in fact dead – this would not contest the fact that the diversity of perceptions of human life explored in this paper continue on, yielding the same benefits as before. Just because we *could* (in *arguendo*) undermine these sources of meaning using postmodern analysis or genetic enhancement doesn't mean we *should*. If the case here concerning the harms of losing our sources of meaning is satisfactory, then it is also sufficient to reject the general dispersion of the postmodern conclusion.

In the initial statement of my affirmative case, I noted that I would have two types of readers: those who found in my argument a view of the human essence they found normatively valuable and those who were skeptical of essential accounts. My solution, then, for this second set was to provide as best as possible a predictive account of the effects of each view on human happiness, once genetic enhancement

¹⁵⁵ Jane Flax *quoted in* Seyla Benhabib, *Feminism and Postmodernism: An Uneasy Alliance*, in *FEMINIST CONTENTIONS* 18 (1995).

¹⁵⁶ *Id.* at 25.

has had its way. I proposed this approach as the solution to the problem of bridging irreconcilable normative stances, as human happiness might provide a reasonably agreeable uniting point for skeptics.

Following this idea, we can note briefly, as Lauren Slater has noted, that postmodernism, and particularly postmodernism in the context of genetic enhancement, has deleterious effects on human happiness. Slater describes a radical plastic surgeon who wishes to grant his patient's their wildest wishes: wings, reptilian scales, and other modifications. Slater follows this doctor to conferences where physicians and bioethicists register their disgust, and yet no one can provide Slater with a compelling account of what is wrong with the doctor's proposed, consensual modifications.¹⁵⁷ Slater finally settles on her own solution, what she calls the Protean self. Slater writes:

Proteus, a minor mythological figure, could shape-shift at will, being alternately a tiger, a lizard, a fire, a flood. Robert Lifton, one of, I think, the truly deep thinkers of the last century, has explored in his volumes how Proteus has become a symbol for human beings in our time. Lacking traditions, supportive institutions, a set of historically rooted symbols, we have lost any sense of coherence and connection.¹⁵⁸

The cause of this rootlessness is the lack of a human essence: "Our protean abilities clearly have their upsides. We are flexible and creative. But the downside is, there is no psychic stability, no substantive self, nothing really meaty and authentic. We sense this about ourselves."¹⁵⁹ Slater believes that what the plastic surgeon wishes to do physically is simply what the postmodern culture has already done to us environmentally. In other words, the postmodern condition is simply the end state of all the harms I have described in this essay as a result of the destruction of essence. In this sense, the economic actor and the postmodern actor arrive at the same point, filled with possibilities and yet stripped of meaning. These observations may not be enough to convince the postmodernists, but they may be enough to convince the rest of us that postmodernism's liberation is not a desirable alternative to our essentialist views.

157 See Slater, *supra* note 1, at 57.

158 *Id.* at 65.

159 *Id.*

**F. SUMMARY: GENETIC ENHANCEMENT
TAKES US FROM THICK TO THIN HUMANITY**

All of these different categories (perfectionism and liberalism, Aristotelianism and dynamic tension, dignitary liberalism and contractual liberalism, preference-satisfaction and identity-formation) are ways we have traditionally understood what it means to be human and live a human life. These are ideal types, and in our own views we tend to mix and match them as we form an answer to the question of what shall we do with our lives. These are thick conceptions of human life.

The harm of genetic enhancement is that it transforms our thick conception of human life into something thinner, diluting our historic sources of meaning and value in human life. These sources go beyond superstructural elements of faith or culture – they are the underlying structures of life in, at the least, Western societies.

In the perfectionist view, we conceive virtue in human life thickly, as a mix of product and process, action and intent, ends and means, subjective and objective accomplishments. We value raw output, and we value the struggle and choice that give narrative shape to our final products. It is this dynamic tension between product and process that animates our uniquely human view of virtue and accomplishment. Genetic enhancement pushes us from this thick conception to a thin one, in which objective product is enhanced at the expense of process. Genetic enhancement shifts us towards a mode of valuing human action that is most associated with the instrumental, impersonal, mechanical, and bureaucratized elements of human life. In so doing, we are better able to achieve our objective goals, and yet the subtle factors that made those goals valuable in our personal lives have vanished.

In the liberal view, we base liberty on a thick conception of human dignity or personal experience. In the former, we imagine that every human merits equal liberty as a result of equal human dignity. In the latter, we imagine that our personal conception of the good life is valuable because it is ours, because it represents our given, internal, natural desires and our beliefs about who we are and what we want to be. In either view, we see the value of the self as its wholeness and its desire to be expressed as what it *is*. Phrases like ‘self-actualization’ are used. Genetic enhancement pushes us from this view of the human essence to a thinner view of ourselves: as bundled preferences that are identifiable, separable units, to be appraised, priced, purchased, traded in and upgraded. Genetic enhancement shifts us towards a mode of valuing our internal selves that is most associated with the appraisal of

commodities in the marketplace. In so doing, we have more freedom to define ourselves, and yet the givenness, internality, and wholeness that sanctified this pursuit have vanished.

This, I think, explains the paradox set out at the beginning of this essay. Genetic enhancement has an extraordinary and peculiar combination. It brings us closer to our goals than we have ever come, and yet it does so while subtly undermining the reasons those goals matter to us. We have internalized the liberal and perfectionist views for so long that we have stopped considering what exactly it is about liberalism and perfectionism that we value. We focus on the ends and not what those ends represent. And so many of us sense that something profound is at stake with genetic enhancement, but we cannot say what. I hope that this essay puts a finger on it. The last sections have been a reexamination of how we structure our modern lives, and why we did so in the first place. I hope this analysis sheds some light on just how deeply genetic enhancement will cut.

G. LAW AND ECONOMICS REVISITED

Now we can see more fully why the law and economics school might not be able to identify and appreciate these consequences. Referring to the thick and thin accounts of human life, the economic model of human behavior best describes only the thin conception. Neoclassical economics, the school that animates much law and economics, is concerned with what I have called the thin versions of virtue and liberty – that is, the objective instrumentalism of accomplishment and the mathematized model of liberty as choice and preference satisfaction. The market system, in its currently dispersed and impersonal form, rewards the product-orientated view of virtue. The microeconomic account of liberty says nothing about the self beyond a mathematical theory of preference sets, utility functions, maximization calculi, rationality, and deviations from rationality. This is not to say that these values are not appropriate to the market, nor that these assumptions aren't useful in an economic model. Socialism is certainly more subjective and process-oriented than market capitalism, but that does not mean it is a better (or even good) means of production and distribution. The point here is not that neoclassical economics is “bad,” but rather that its language is impoverished when extended beyond the sphere of economics into virtue, liberty, and the like. Using the economic methodology to assess the political and social choices of genetic enhancement means missing the most important aspects – it is using a ruler to describe a painting.

The source of the problem is that economics began as a model of human behavior, and no one expects a model to capture the full depth of what it describes. A model is an approximation of a complex system, and its worth is measured by its predictive value. But somewhere along the line, the tool was turned into the project; economic behavior was no longer proposed as a simplified description of human behavior but as a normative ideal. Some, like Posner, are explicit in this. Others have done it implicitly, by simply allowing efficiency and other economic values to guide their normative analyses of social policy, while systematically under-analyzing values that are harder to quantify and describe.

Yet as we have seen, economic behavior as an ideal shares the same weaknesses of economic behavior as a model. It does not capture the full range of what is going on – and in this case, it is unable to recognize and protect the values at stake.

This analysis of genetic enhancement calls to the forefront all the critiques of economic analysis we have discussed. There are issues of incommensurability, the cost of costing, the cost of choosing, and the poverty of economic norms in capturing what gives depth and importance to our perception of human life.

Law and economics will be a poor guide on genetic enhancement. The descriptive school will have a difficult time describing its harms. And whether explicit or implicit, the normative school cannot guide us, because its framework has already prejudged the answer – while lacking the apparatus to weigh fully the costs.

H. FUKUYAMA REVISITED

As a final note, I would like to return to Fukuyama's account. Recall that Fukuyama described one problem with genetic enhancement that did not fit into his analytic framework – the argument I labeled 'reductionism'. There were two elements to this claim: Fukuyama argued that without our full range of human emotions, including suffering, we would have (1) no elements of character, and (2) no depth. While this idea only claimed a brief paragraph in Fukuyama's book, I believe that in those sentences Fukuyama hit on exactly what is at stake: something will be lost in the depth and breadth of human life.

Yet, as I argued earlier, Fukuyama's theory of human boundaries and human rights did not give us a language or framework for analyzing these harms. Nor did it give us a reason to adopt the

distinction between therapy and enhancement as a policy solution. One very terrible consequence of genetic enhancement could be the undermining of human rights, yet even if we never reach that point, there is still serious harm done. The theory in this essay, I hope, gives an account of that harm while still allowing the *possibility* that such Fukuyaman harms may occur.

In the pages above, I have tried to reconstruct Fukuyama's case for the harm of reductionism, what I have referred to as the loss of the human essence. Now, in the section that follows, I will make the argument that legislating the distinction between therapy and enhancement is the best policy solution to the harms I have described.

VII. POLICY: ENHANCEMENT VERSUS HEALING

How can the law respond to this harm? Now that I have reconstructed the case against genetic enhancement, I must explain why I end up, as Fukuyama did, supporting the legal distinction between therapy and enhancement. Importantly, I support this distinction for instrumental and not intrinsic reasons. My concern is that we capture as many of the benefits of genetics as possible while protecting our sense of the human essence.

A. FIRST PRINCIPLES: THE BASIS FOR REGULATING ENHANCEMENT

The case for banning enhancement of one's future children is easier than the case for banning self-enhancement.¹⁶⁰ This is because

160 It is worth noting that in the case of banning enhancement of future children, one's opinion on this issue should function independently of one's opinion on abortion. It is tempting to conflate the two, since they both involve unborn potential persons. Yet there is a critical distinction between regulating abortion and regulating enhancement, and it would be misguided to line up on this issue based on political concerns about the other. The essential difference is that abortion can be conceived as a harm to either (1) a fetus or (2) a *potential* future person who will not be born. In contrast, enhancement is a harm that is actually realized by a person not in the fetal stage, nor in the abstract person-who-would-have-been stage. Rather, the harm is realized once the child is in fact *born* and is old enough to conceive the consequences. Thus, in order to accept the harm of enhancing future children, one need not have any opinion on the status of the fetus. Nor does one need to wrestle with the philosophical question of what it means to harm a potential future person who will never be born. Those are problems in abortion. But in enhancement, the problems actually *vest* – the child is born and the harm manifests itself. Therefore, we can agree on the nature of this enhancement harm regardless of whether we disagree

enhancing one's future child, with all of the harms I have described, is a harm done to another, while self-enhancement is (so the theory goes) a harm to oneself.

In other words, if genetic enhancement destroys the human essence, then why shouldn't we allow consenting adults to destroy their own essences, if they believe the benefits outweigh the costs?

One popular response (though not mine) is that there really is rarely such thing as a purely self-regarding action. This view animates a great deal of communitarian legislation on both sides of the political spectrum. As John Gray puts it:

The idea that one person may harm himself or herself without affecting others, that there is a sphere of self-regarding conduct which deserves absolute immunity from legal and social intervention, neglects the interdependency of human beings... We are not, in truth, Mill's sovereign selves, parading our individuality before an indifferent world: we are born in families, encumbered without our consent by obligations we cannot by voluntary choice renounce.¹⁶¹

For many, this type of thinking provides a basis for regulation, and the case for banning enhancement need not go further. However, in the spirit of remaining agnostic on as many normative disputes as possible – in order to provide the firmest case against genetic enhancement – I wish only to note this view, but not to rely on it.

There is another answer, I believe, that falls squarely within the liberal view of individual freedom, and even neoclassicists may acknowledge its appeal. The answer is that genetic enhancement is an ideal example of the Prisoner's Dilemma – and as such, it is a scenario where individuals will not be able to reach their optimal, preferred choice in the absence of regulation. This is where my analysis of Posner's third criterion for normative theories (from way back at the start of the essay) is relevant. Posner hinted that we should reject ethical theories whose required actions would fail in a competitive environment. One of my responses was that Posner was ignoring an asymmetry. Perhaps instead of rejecting the ethical theory, we should consider rejecting the less ethical theories that out-compete it. My example came from game theory economics – the Prisoner's Dilemma describes a situation in which all participants would be better off with

on the harms of abortion. An opinion on one has no necessary relationship to an opinion on the other.

161 JOHN GRAY, *BEYOND THE NEW RIGHT: MARKETS, GOVERNMENT, AND THE COMMON ENVIRONMENT* 51-52 (1993).

outcome C, but because they cannot be sure everyone else will do the same, they choose the less desired path. This is the tragic irony of the Prisoner's Dilemma; every individual wants the same thing, but left to our own devices, everybody loses.

When we consider the competitive advantages that genetic enhancement offers us, it is reasonable to assume that if it is used by some, it will one day be used by many, if not most. No one could afford, in a competitively structured market society, to choose otherwise. Yet crucially, this does not mean that everyone would *want* genetic enhancement. This, as we saw, was the lesson of the Prisoner's Dilemma. There may be an optimal outcome that everyone agrees on, such as no genetic enhancement, but without a third party guarantee that no one else will enhance, non-enhancement is a dominated strategy. The Prisoner's Dilemma is a situation in which regulation benefits, rather than constrains, individual choice by making the desired choice possible. If we accept the theory of harm laid out in this essay, then third party regulation is necessary. And since competition also occurs internationally, this need would transcend national regulation and require international agreements as well.

B. NEED FOR A PRACTICAL STANDARD

My goal is a standard that allows as many of the benefits of genetic science as possible while protecting against the destruction of the human essence.

The problem is that "protection of human essence" is not a practical standard for public policy. In fact, it is problematic for three reasons.

First, as important as it is, when placed in the banal context of public policy, phrases like "human essence" and "meaning" are not likely to be taken seriously.

Second, the boundaries of what undermines the human essence are unclear. When we consider the big picture, as we did in this essay, the cumulative effects of genetic enhancement cause profound harms; but in the case-by-case nature of legislation, 'destruction of human essence' does not provide enough resolution for line-drawing.

Third, the big picture of dehumanization will resonate with many people and would thus, in theory, be expressed in democratic decision-making. However, in reality, the enhancements offered by genetics will likely be incremental, with the more complex and higher

order possibilities coming way down the line. Thus, eased into society a little at a time, genetic enhancement may shift norms incrementally, and in this model, the essence principle would not be protected by democratic decision-making, because each allowed enhancement might serve to push back the barrier of when we think essence is affected. In the end, we might find ourselves in a place we never would have wanted to go had we seen the end game from the starting point, and yet the shift in norms might leave us less well off without the ability to understand why (nor, possibly, the ability to go back).

Therefore, I need a standard that acts as a reasonable proxy for what I am actually concerned about, yet has a more practical policy bent. For that I turn to therapy and enhancement.

C. ENHANCEMENT VERSUS THERAPY

The distinction between therapy and enhancement is widely used in bioethics, and thus benefits from familiarity. The two terms are meant to be mutually exclusive: therapy is used to signify the correction of a problem (such as cancer treatment), while enhancement is something elective (such as cosmetic surgery).¹⁶²

The distinction is controversial, however, because it quickly runs into trouble at the margins. In fact, I believe Fukuyama understates the difficulty of drawing this distinction when he writes that “even in the cases where the borderline between sickness and health, therapy and enhancement, is murkier, regulatory agencies are routinely able to make these distinctions in practice.”¹⁶³

Fukuyama’s approach is essentially one of normalcy versus abnormalcy. He uses height as the easiest example. Assume, for example, that the mean height for men is 5’10”. We then imagine a standard bell curve graph that represents the normal distribution of men’s heights around the average. At some point, the tails of this bell curve represent what is beyond normal height. A man who is 4’ would

¹⁶² The phrasing is misleading, because the word “enhancement” has a positive connotation; i.e., to make something better. Yet consider the issue of sexual orientation. A person might argue that modifying sexual orientation is decidedly *not* therapy. However, the word opposite *therapy* is *enhancement*, which places a positive connotation on an action they might view as wholly negative. Thus, the therapy/enhancement phraseology is semantically distasteful for them: the word mistakenly connotes a negative value judgment on homosexuality, which was, of course, what they were trying to avoid in the first place. To avoid this confusion, I would suggest using the phrases “therapeutic” and “non-therapeutic.”

¹⁶³ FUKUYAMA, *supra* note 2, at 209-10.

There is a second approach to measuring normalcy, what we might call a subjective approach to distinguish it from the objective, percentile approach used above. We can propose this view by analogy to economist Amartya Sen's subjective definition of poverty. Sen was reacting to objective definitions of poverty that suffered from two flaws. First, arbitrariness (as we discussed above), and second, mismatch: a set poverty line may capture the inability to purchase basic goods, but it does not necessarily capture what really bothers us about poverty. Therefore, Sen, quoting Adam Smith, described the following definition: poverty is the inability to participate in one's community without shame.

We can imagine a similar definition to define normalcy for therapy versus enhancement determinations. An abnormal trait is one that would cause a reasonable person difficulty or shame in participating in daily life, beyond the normal insecurities we all might feel. Thus, a person with a large but fairly typical nose would be normal (and their nose job would be cosmetic enhancement), while a person with a bulbous growth on the nose that draws stares in daily interactions would be abnormal (and removal would be therapy).

A definition of this sort is not without its own set of problems. The subjective nature makes measurements difficult, allows room for experts to disagree, and is far more open to corruption given the lack of objective standards. What, for example, constitutes shame? We can imagine a child with large but not unusual ears feeling shame, but we

such a policy of using genetics to take all people to the mean would encounter all of the harms I have attributed to genetic enhancement in the preceding sections, without the firewalls created by the therapy/enhancement categories. Without going through the entire analysis again, it shall suffice to say that the elements of concern (givenness, incommensurability, individuality, struggle, choice, and the rest) would equally be compromised by the concept that every individual has the right to be modified or reconstructed to fit the mean at their whim. Again people would be able to alter themselves at will for conditions which, while they are not at the mean, also do not qualify as extreme cases within the conceptual domain of therapy. As I will show later in this section, the benefit of the therapy/enhancement distinction is that the concept of therapy, whether or not its borders are arbitrary, blesses the use of genetic modification in a way that reduces the harms of the modification to the human essence. I will discuss this point in more detail soon, but here it is sufficient to say that for these reasons, the gradient approach fails my initial test of allowing the benefits of genetics while minimizing the harms. The practical reason this approach fails is that it would almost certainly generate an untenable barrier to full-on enhancement. Allowing the physician to perform the modification on all people, in an amount relative to their distance from the mean, is quite distinct in practice from saying only people beyond this threshold disease/abnormalcy point can go to the doctor and seek to be modified. With patients of all stripes in the office, receiving these sorts of treatments to varying degrees, it seems likely that the demand for enhancement will quickly erode the weak barriers of "You're here, but I can only take you X far."

would still most likely consider plastic surgery in this case cosmetic. Shame must mean something much more extreme here to track the distinction between therapy and enhancement: it must mean something akin to the inability to walk down the street without strangers staring.

However, for all the shortcomings of a subjective approach, there are benefits as well. Rather than being bound by rigid rules, a subjective approach would allow physicians to make determinations on a case by case basis. That is, when a child with feature X comes into the doctor's office, rather than worrying whether the radius is 0.5 or 0.6, the doctor can determine whether the individual needs the modification to participate normally in her community.

The bell curve is not the only description of traits and normalcy. There is also the question of binary, either-or conditions. However, the same methodology and the same choice between societal determinations (in this case, yes/no rather than line-drawing) and subjective standards giving physicians discretion would apply.

2. DISEASE VERSUS NON-DISEASE

A second set of bioethicists argue that the normal/abnormal distinction is insufficient for unraveling therapy from enhancement. They often point out that susceptibility to certain diseases is, by the objective measures above, perfectly normal, yet we would classify treatment of those diseases as therapeutic. Furthermore, we could imagine treatments that raise our internal ability to avoid disease above what is normal, an activity that is therapeutic in nature though it summons the feel of enhancement. For example, one proposed genetic modification is encoding a resistance to certain diseases, sort of a genetically transmitted vaccine. In another example, the NIH has approved gene transfer technology to increase LDL receptor activity above normal levels for persons with hypercholesterolemia.¹⁶⁵ Following the normal/abnormal analysis, this would qualify as enhancement, because it boosts this body function above normal human levels. However, its aim is the prevention or amelioration of disease and therefore suggests a therapeutic character. Those who favor these treatments argue that yes, boosting LDL receptor activity gives the patient super-normal activity, but it does so in order to prevent or reduce disease. Thus, it is treatment of disease, and not

¹⁶⁵ LORI B. ANDREWS ET AL., GENETICS: ETHICS, LAW, AND POLICY 433 (2002).

normality/abnormality, that defines the split between therapy and enhancement.

D. FUNCTIONALIZING ENHANCEMENT VERSUS THERAPY

Suppose we assume that both theories are correct: neither normality nor disease-status is sufficient to completely explain the distinction between therapy and enhancement. Rather, the two dichotomies represent two axes of analysis for the same question.

Trait is:	Normal	Abnormal
Disease	1. Susceptibility to Disease (Intervention: genetic vaccines = Therapy)	2. Cancer (Intervention: genetic cancer treatment = Therapy)
Non-Disease	3. Eye Color (Intervention: changing eye color genetically = Enhancement)	4. Genetic Deformity that Garners Stares on Street (Intervention: genetic modification for next generation = Therapy)

The above framework suggests that disease and abnormalcy are both sufficient conditions for therapy, but neither is necessary in the presence of the other.

Box (1) raises the issue of genetic therapy to create inherent vaccinations. Some bioethicists have questioned whether such

techniques constitute enhancement, since natural vulnerability to common diseases is normal in the population. But in the above framework the aim of preventing disease brings this box into the realm of therapy.

Box (2) is the easiest case of clear therapy. Abnormal disease traits would include cancers, cystic fibrosis, Huntington's, and other conditions that are universally considered diseases and abnormal states.

Box (3) suggests that enhancement interventions are those that seek to change a normal, non-disease trait.

Box (4) allows a person to modify traits via therapy that are abnormal but may not be labeled as diseases using the objective or subjective method described above.

Thus, law and medical ethics would prevent Box (3): modifications for normal, non-disease traits. This is the domain of enhancement.

E. THE CATEGORIES SHAPE THE PERCEPTIONS

However, I do not know if we can ever distinguish purely in principle between therapy and non-therapy. Some theorists, Foucault in particular, have mounted forceful campaigns to argue that our categories of normalcy and disease are deeply problematic.

Therefore, I will suggest that even if the distinction between therapy and enhancement is entirely arbitrary, we need it as a crucial social construction. As Mary Douglas has written, it is often not the substance or rationality of our categories that matters – it is our apparent human need to create and maintain categories.¹⁶⁶

In this case, I believe that the categories of therapy and enhancement can function in a way that blesses the use of genetic manipulation for a wide range of interventions, while minimizing the damage done to the human essence.

Therapy versus enhancement is not a perfect proxy for protecting the human essence. We can imagine enhancement interventions that, taken alone, have very little effect on our sense of

¹⁶⁶ See MARY DOUGLAS, PURITY AND DANGER: AN ANALYSIS OF THE CONCEPTS OF POLLUTION AND TABOO 171 (2002).

the human essence.¹⁶⁷ For example, neither flu shots (therapy) nor cosmetic braces (enhancement) challenge human meaning in any significant way. We might call braces *de minimus* enhancement. We can also imagine therapeutic interventions that *could* have an effect on meaning: the removal of anti-social psychotic desires, for example, calls into question the modification of a core, if negative, trait of one's identity.

Yet that example is telling, because something in the therapeutic nature of the intervention dissolves or at least reduces the perceived cost to the human essence. The example of a person seeking modifications to reduce anti-social criminal behavior does not resonate the same way as a person getting treatments to be more charming. In the latter, we might perceive the new personality as somehow fake or contrived. But in the previous case, we might perceive the new personality as a return to normal – the long-awaited departure of nasty disease. Any medical intervention may have qualities of rationalization, pricing, and instrumentalism, but by creating and maintaining the categories of therapy and non-therapy, we have cleared out a space in our moral intuitions for *emotionally permissible* interventions – the value of healing dissolves the potential attendant cost to meaning. Thus, these categories, whether arbitrary in their substance or not, provide us with a safe space in which to capture many of the benefits of genetics while disallowing a whole range of affronts to our human essence.

VIII. CONCLUSION

This essay raises three flags.

The first is that science moves incrementally, and acceptance of one small change facilitates acceptance of the next. As such, we may one day find ourselves in a place that is deleterious, wondering how we got there. The utility of an essay like this is to look far down the line – farther than skeptics might think necessary – to ask, is this someplace we wish to end up?

The second flag is that genetic enhancement pushes us from a thick to a thin understanding of what it means to be human. It does so in ways that span the big normative divisions and undermine the key sources of value and satisfaction in our lives, including identity,

¹⁶⁷ Though I wouldn't want to neglect the possibility that a sufficient number of smaller enhancements, taken together, can have effects similar to a larger (or "deeper") enhancement.

dignity, virtue, accomplishment, and experience. The irony, however, is that genetic enhancement does this while appearing to further the same goals it ultimately undermines. This helps to explain the puzzle of genetic enhancement set out at the beginning of the essay – why it is so difficult to articulate a theory of harm. We have valued these elements of human life for so long that we rarely consider the motivating reasons we value them in the first place. Thus, the apparent benefits of enhancement to these goals are so overt, while the consequences for them are indirect and subtle, though fatal. This essay attempts to recall those first principles, in order to build the case against genetic enhancement.

The third flag is that the consequences of genetic enhancement will not be detected by economic analysis, in either its descriptive or normative form. This is important to know, because the law and economics school represents a prominent and influential school of legal theory – one which has already been vocal in other areas of genetics. The point of this essay is not to disparage market economics or the power of the economic model as a descriptive tool in many areas. Rather, the point is that, on the questions of genetic enhancement, economic analysis will not guide us well. As a descriptive system, its greatest weakness is understanding and analyzing exactly the features of humanity that genetic enhancement will harm. And as a normative system, its framework contains threshold assumptions that will prejudge the crucial issues of enhancement without ever holding them under the spotlight for proper inspection. Thus, we will lose something, without ever knowing what was at stake. As a model – or as a model turned into an ideal – economics describes us in exactly the form to which genetic enhancement will reduce us.

This essay proposes a policy solution that will preserve a vast swath of the benefits of genetics, while at the same time preserving the core human values at stake. The distinction between therapy and enhancement, codified as a principle in law and medical ethics, will capture the healing potential of genetic science, while protecting our deepest senses of what it means to be human.

THINKPIECE

USING WYSH COMPUTER PROGRAMS TO MODEL
THE ALIEN TORT CLAIMS ACT

ERIC ALLEN ENGLE*

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USING WYSH COMPUTER PROGRAMS TO MODEL THE ALIEN TORT CLAIMS ACT

ERIC ALLEN ENGLE

This paper argues that an artificial intelligence algorithm can model some of the principles of civil procedure. The binary conditionals used in civil procedure – e.g., personal jurisdiction exists/does not exist – correspond closely to the Boolean logic used by computers. Modeling procedural rules on a computer is thus possible and possibly useful. To illustrate this thesis, this paper applies the WYSH computer programming language to the Alien Tort Claims Act and Torture Victim Protection Act.

I. WYSH: A DEDICATED COMPUTER PROGRAMMING LANGUAGE FOR ARTIFICIAL INTELLIGENCE IN LAW¹

Since WYSH is an internet based application it is globally available. WYSH enables a lawyer anywhere to model any law quickly and accurately using a computer. WYSH is an inference engine. Many inference engines exist on the market today.² However, WYSH and PANNDATA (one of WYSH's predecessors) are the only inference engines of which I am aware that specifically address the question of legal reasoning.

The WYSH engine is simple, globally accessible, and useful, though it does have some limitations. Any lawyer could easily learn to program in WYSH. Rulebases created in WYSH can be called from other rulebases anywhere in the world via the World Wide Web. WYSH also has an automatic English language parser, formats output and input dialogs automatically, and its output closely resembles standard English. Finally, WYSH is cost-free to users, thanks to the Australian National Research Council.

The WYSH engine automatically develops inferences from the rule base or case base which is supplied to it using forward chaining

1 For a brief introduction to WYSH, see <http://www.austlii.edu.au/austlii/wysh> (last visited Mar. 7, 2004).

2 For a list of open source AI interpreters, see <http://www-2.cs.cmu.edu/afs/cs/project/ai-repository/ai/areas/expert/systems/0.html> (last visited Mar. 7, 2004).

and backward chaining. Because WYSH automatically chains the inferences for the programmer, it simplifies greatly the task of programming. Furthermore, the syntax of WYSH resembles BASIC and Pascal, whose syntax closely resembles standard English. Because of these facts, WYSH is highly accessible even to inexperienced programmers. A simple learning curve, tangible results, and global accessibility are why WYSH is worth investigating.

WYSH is a Perl program run through a common gateway interface (CGI). Therefore, a rule base can be made and hosted anywhere on the internet and call the WYSH CGI to process it. Further, different rule bases can call each other. Thus, in theory, several different jurists could develop different but interrelated rulebases in WYSH to represent whole areas of law. CGI's do however run less rapidly than a locally hosted program. Compiling also may be a cause of slow execution. Slow execution leads to frustration when testing and debugging rule bases because the CGI must compile the program for each and every execution of the rule base. Since WYSH is simply a web front end for the YSH inference engine it may be possible to obtain the YSH backend and use that for testing and debugging. I have not yet however found a source for the YSH program. YSH is currently being upgraded to a new program AIDE,³ so some of the critiques and suggestions raised here may be being taken care of.

WYSH supports most simple control structures (IF... THEN... ELSE... ELSE IF; FOR...NEXT). End of line (return) rather than a semi-colon (;) indicates the conclusion of a statement. Function calls also are supported in WYSH. WYSH is not object oriented so FOR EACH is not supported. WYSH also does not have a Graphical User Interface. (GUI). I do not see either of these as serious limitations for the modelling of small rulebases.

WYSH uses a quasi English syntax which seems similar to BASIC. WYSH also automatically generates dialogues. WYSH rulebases should be "isomorphic", i.e. the text of a WYSH knowledge base should be as close as possible to the original legal text it models. In theory this isomorphism reduces the likelihood of typographical error or logical confusion and simplifies programmatic representation of law. Personally I find isomorphism neither a blessing nor a curse. However for new programmers isomorphism and automatic dialogue generation are strong points for WYSH because it can be an

³ Caroline White, *Artificial Intelligence to Give Lawyers a Run for Their Money*, dotJournalism, May 3, 2001, at http://www.journalism.co.uk/ezine_plus/dotjark/story231.shtml (last visited Mar. 7, 2004).

introductory language for lawyers (i.e. non-programmers). This simplicity speaks for using WYSH as an introduction to computer intelligence in law.

II. ARTIFICIAL INTELLIGENCE APPLICATIONS IN WYSH

I have written one case base and several small rulebases using WYSH to simulate a court facing a claim under the Alien Tort Claims Act (ATCA) and/or the Torture Victim's Prevention Act (TVPA). I then ported the rulebases both as separate entities and as one entire overview to metaCard's Transcript scripting language, which was derived from Pascal / HyperTalk and also uses quasi-English for its instruction.

A. RULE BASED INFERENCE ENGINE (DEDUCTION)

The WYSH artificial intelligence engine allows the programmer to build either a rule base or a case base. A rule base is simply a series of rules that represent some area of knowledge – e.g., statutes. Rule based inferencing works via deduction – reasoning from general rules to specific cases. Deductive reasoning is the principle form of inference in the civil law. However, it is only a secondary form of reasoning in common law. Deduction does apply even within the common law to inferences from statutes. Thus, the rule based inference engine is better adapted to represent statutes. Case based reasoning in contrast reasons inductively from a series of known cases to the instant cases. Case based reasoning is appropriate for representing case-law.

The following rule bases simulate the findings that a court would meet under the Alien Tort Claims Act or Torture Victim's Protection Act. Note that each of these modules can be separately run under WYSH simply by copying the text, exactly as it appears, and pasting it into the WYSH manual start page. The beauty of the WYSH engine is that it automatically chains each of the rules in one rule base so that each of these modules is automatically interrelated without having to be explicitly called by the user. A rule set is declared in this way:

RULE *ruleName* PROVIDES
Statements
conclusion

The following rules represent the Alien Tort Claims Act (ATCA),⁴ the Torture Victim Protection Act (TVPA)⁵ and various defenses developed in about a dozen cases. Each RULE indicator can run separately on the WYSH manual start page.⁶ The entire rule base can be run as one whole.

RULE 'ATCA' PROVIDES

```

IF      the defendant is an alien
THEN
      IF      the tort is a violation of the law of nations
      OR      the tort is a violation of a treaty of
                the United States
      THEN
        U.S. courts have original jurisdiction
  
```

RULE TVPA PROVIDES

```

IF      the defendant is an individual
      AND the plaintiff has exhausted their remedies
            in the foreign nation
      AND the U.S. ten year statute of limitations has
            not tolled
      AND the plaintiff was subjected to torture or
            extrajudicial killing
      AND the defendant had actual authority
      OR  the defendant had
            apparent authority
      OR  the defendant acted under
            color of law
      THEN
        the defendant is liable in tort for the injuries to
        the plaintiff
      ELSE
        the defendant is liable in tort for the injuries to
        the plaintiff
  
```

RULE 'tort defenses' PROVIDES

```

IF      federal jurisdiction does not apply
      OR  government immunity applies
      OR  head of state immunity applies
      OR  exhaustion applies
      OR  comity applies
  
```

4 28 U.S.C. § 1350 (1789).

5 Pub. L. No. 102-256, 106 Stat. 73 (1992).

6 See <http://aide.austlii.edu.au/wysh/wyshstart.html> (last visited Mar. 7, 2004).

OR the claim is time barred
 OR forum non-conveniens applies
 OR political question doctrine applies
 THEN
 defendant is not liable in tort
 ELSE
 defendant may be liable in tort

RULE 'federal jurisdiction' PROVIDES
 IF subject matter jurisdiction applies
 AND personal jurisdiction applies
 THEN
 federal jurisdiction applies
 ELSE
 federal jurisdiction does not apply

RULE 'in personam jurisdiction' PROVIDES
 IF specific jurisdiction applies
 OR general jurisdiction applies
 THEN
 in personam jurisdiction applies
 ELSE
 in personam jurisdiction does not apply

RULE 'general jurisdiction' PROVIDES
 IF defendant has systematic and continuous
 contacts to the United States
 THEN
 general jurisdiction applies
 ELSE
 general jurisdiction does not apply

RULE 'specific jurisdiction' PROVIDES
 IF original jurisdiction applies
 OR federal question applies
 THEN
 subject matter jurisdiction applies

RULE 'original jurisdiction' PROVIDES
 IF general jurisdiction applies
 OR personal jurisdiction applies
 THEN
 IF defendant is an alien
 THEN
 IF law of nations applies

OR the tort is a violation of a
treaty of the United States
THEN
original jurisdiction applies
ELSE
original jurisdiction does not apply

RULE 'in personam' PROVIDES

IF defendant has systematic and continuous
contacts to the United States
THEN
general jurisdiction applies
ELSE IF
defendant has minimum contacts to the U.S.
THEN
IF the tort occurred in the U.S.
OR the tort has effects in the U.S.
THEN
personal jurisdiction applies
IF general jurisdiction applies
THEN
personal jurisdiction applies

IF personal jurisdiction applies
THEN
'in personam' jurisdiction applies

RULE 'law of nations' PROVIDES

IF the underlying tort arises out of piracy
OR the underlying tort arises out of genocide
OR the underlying tort arises out of an illegal
war of aggression
OR the underlying tort arises out of a crime
against humanity
OR the underlying tort arises out of a
conspiracy to commit war of aggression
OR the underlying tort arises out of a
conspiracy to commit a crime against
humanity
OR the underlying tort arises out of a
conspiracy to commit genocide
THEN
the tort is a violation of the law of nations
ELSE
the tort is not a violation of the law of nations

RULE 'FSIA' PROVIDES

IF the defendant is not a government

THEN

government immunity does not apply

IF the defendant is a government

THEN

IF there is an express waiver of governmental immunity

OR the act is purely commercial (actio iure gestionis)

THEN

government immunity does not apply

ELSE

government immunity applies

RULE 'head of state immunity' PROVIDES

IF the defendant is a head of state

OR the defendant is a governmental minister

THEN

the defendant is not liable

ELSE

IF the defendant is still serving in their ministerial capacity

THEN

head of state immunity applies

ELSE

head of state immunity does not apply

RULE 'official immunity' PROVIDES

IF the defendant is a civil servant

AND the defendant is in the term of his office

AND the act is a ministerial act

AND there is no waiver of immunity

THEN

official immunity does not apply

ELSE

official immunity applies

RULE 'statute of limitations' PROVIDES

IF the tort happens within the last ten years

OR equity tolls the statute of limitations

THEN

the statute of limitations applies

ELSE

the statute of limitations does not apply

RULE 'forum non conveniens' PROVIDES

IF this forum is oppressive to the defendant
 OR this forum is an uneconomical choice
 when compared to competing fora
THEN
 forum non conveniens applies
ELSE
 the claim is barred by the statute of limitations

RULE 'act of state doctrine' PROVIDES

IF the relief sought requires a U.S. court to declare
 invalid the official act of a foreign sovereign
 performed in its own territory
THEN
 act of state doctrine applies
ELSE
 act of state doctrine does not apply

RULE 'political question' PROVIDES

IF the issue has been committed to the executive or
 legislature
 OR there are no judicially manageable
 standards
 OR it is impossible to decide the case without
 also making a policy determination
 OR the case requires unquestioning adherence
 to a political decision already made
 OR the court risks causing potential
 embarrassment by creating multiple
 conflicting pronouncements from
 different branches of government
THEN
 political question doctrine applies
ELSE
 political question doctrine does not apply

RULE 'comity' PROVIDES

IF principles of fairness indicate that a foreign court
 would be more appropriate
 OR judicial economy indicates that a foreign
 court would be more appropriate
THEN
 comity applies
ELSE
 comity does not apply

RULE 'color of law' PROVIDES

- IF the non state actor fulfils a public function
- OR the nexus of state and non-state actor
- connections are close
- OR the private sector was compelled by the
- state to act as it did
- OR the action was undertaken jointly

THEN

The non state actor is considered to be a state actor for it operated under color of public law

ELSE

the non state actor is not considered to be a state actor for it did not operate under color of public law.

As we can see, this rule base is relatively complex. Logically, the first inquiry should be whether jurisdiction exists. We must then inquire whether a *prima facie* violation of the ATCA or TVPA exists. If so, we then consider the half dozen procedural defenses which defendants can raise to thwart such claims. If jurisdiction exists, and a *prima facie* tort exists under either the ATCA or TVPA, we then look at the defenses. If none of the defenses applies then a tort may exist.

B. CASE BASED INFERENCE ENGINE (INDUCTION)

A case base is a representation of a series of cases. Case bases permit the computer to reason inductively, from the case rules provided to determine the outcome in the case being determined. Basically a case base should summarize a series of relevant cases. The engine then reasons from the known cases to determine what the outcome would be in the case provided by the user. Inductive reasoning, inferring from known cases to determine the outcome in a new similar case, is the principal form of reasoning in the common law. This is a form of analogical reasoning: aspects of known cases are compared to those of a new case. If those aspects are similar then the same rule used in the old cases will apply to the new cases.

The WYSH engine includes case based reasoning. The singular brilliance of this engine is that it allows a weighted comparison of factually similar cases to be used to determine whether a rule does or does not apply to a given case.

The following is the listing of the case base used to determine whether a case constitutes a violation of either the Alien Tort Claims

Act or Torture Victim Protection Act. The code is fairly self explanatory. Each EXAMPLE is a new case in the case base. The names of the EXAMPLEs correspond to the name of cases litigating the ATCA or TVPA in U.S. courts. The conditionals (IF...THEN) are so the same as in standard English.

GOAL RULE defendant may be liable PROVIDES
DETERMINE defendant may be liable

EXAMPLE *An v. Chun*⁷ PROVIDES

defendant may not be liable

IF defendant was present in the United States
AND defendant was not a U.S. resident
AND defendant was not kidnapped
AND defendant state asserted its right to immunity
AND defendant was a minister
AND defendant was representing a state friendly to the United States
AND defendant did not transact business in the United States
AND defendant did not maintain an office in the United States
AND defendant did not act as a commercial agent (acto jure gestionis)
AND defendant did not act as a sovereign (acto jure imperii)

EXAMPLE *Kadic v. Karadzic*⁸ PROVIDES

defendant may be liable

IF defendant was present in the United States
AND defendant was not a resident in the United States
AND defendant was not kidnapped
AND defendant state asserted its right to immunity
AND defendant was a minister
AND defendant was not representing a state friendly to the United States
AND defendant did not transact business in the United States
AND defendant did not maintain an office in the United States

7 1998 U.S. App. Lexis 1303 (9th Cir. 1998).

8 70 F.3d 232 (2d Cir. 1996).

AND defendant did not act as a commercial agent (acto jure gestionis)

AND defendant did act as a sovereign (acto jure imperii)

EXAMPLE *Filartiga v. Pena-Irala*⁹ PROVIDES
defendant may be liable

IF defendant was present in the United States

AND defendant was a resident in the United States

AND defendant was not kidnapped

AND defendant state did not assert its right to immunity

AND defendant was a minister

AND defendant was representing a state friendly to the United States

AND defendant did transact business in the United States

AND defendant did maintain an office in the United States

AND

defendant did not act as a commercial agent (acto jure gestionis)

AND

defendant did act as a sovereign (acto jure imperii)

EXAMPLE *Amerada Hess*¹⁰ PROVIDES

defendant may not be liable

IF defendant was not present in the United States

AND defendant was not a resident in the United States

AND defendant was not kidnapped

AND defendant state asserted its right to immunity

AND defendant was a minister

AND defendant was representing a state friendly to the United States

AND defendant did not transact business in the United States

AND defendant did not maintain an office in the United States

AND defendant did not act as a commercial agent (acto jure gestionis)

AND defendant did act as a sovereign (acto jure imperii)

⁹ 630 F.2d 876 (2d Cir. 1980).

¹⁰ *Argentine Republic v. Amerada Hess Shipping Corp.*, 488 U.S. 428 (1989).

EXAMPLE *Sampson v. Germany*¹¹ PROVIDES
defendant may not be liable

IF defendant was present in the United States
AND defendant was not a resident in the United States
AND defendant was not kidnapped
AND defendant state asserted its right to immunity
AND defendant was not a minister
AND defendant was representing a state friendly to the
United States
AND defendant did transact business in the United
States
AND defendant did maintain an office in the United
States
AND defendant did not act as a commercial agent (acto
jure gestionis)
AND defendant did act as a sovereign (acto jure
imperii)

EXAMPLE *U.S. v. Noriega*¹² PROVIDES
defendant may be liable

IF defendant was present in the United States
AND defendant was not a resident in the United States
AND defendant was kidnapped
AND defendant state did not asserted its right to
immunity
AND defendant was a minister
AND defendant was not representing a state friendly to
the United States
AND defendant did transact business in the United
States
AND defendant did not maintain an office in the
United States
AND defendant did act as a commercial agent (acto
jure gestionis)
AND defendant did not act as a sovereign (acto jure
imperii)

EXAMPLE *Doe v. Unocal Corp.*¹³ PROVIDES
defendant may be liable

IF defendant was present in the United States
AND defendant was a resident in the United States
AND defendant was not kidnapped

11 250 F.3d 1145 (7th Cir. 2001).

12 117 F.3d 1206 (11th Cir. 1997).

13 248 F.3d 915 (9th Cir. 2001).

AND defendant state asserted its right to immunity
 AND defendant was not a minister
 AND defendant was representing a state friendly to the
 United States
 AND defendant did transact business in the United
 States
 AND defendant did maintain an office in the United
 States
 AND defendant did act as a commercial agent (*acto*
jure gestionis)
 AND defendant did not act as a sovereign (*acto jure*
imperii)

EXAMPLE *Doe v. Unocal Corp.*¹⁴ PROVIDES

defendant may not be liable

IF defendant was not present in the United States
 AND defendant was not a resident in the United States
 AND defendant was not kidnapped
 AND defendant state asserted its right to immunity
 AND defendant was not a minister
 AND defendant was not representing a state friendly to
 the United States
 AND defendant did transact business in the United
 States
 AND defendant did not maintain an office in the
 United States
 AND defendant did act as a commercial agent (*acto*
jure gestionis)
 AND defendant did act as a sovereign (*acto jure*
imperii)

EXAMPLE *Saudi Arabia v. Nelson*¹⁵ PROVIDES

defendant may not be liable

IF defendant was present in the United States
 AND defendant was not a resident in the United States
 AND defendant was not kidnapped
 AND defendant state asserted its right to immunity
 AND defendant was a minister
 AND defendant was representing a state friendly to the
 United States
 AND defendant did transact business in the United
 States
 AND defendant did maintain an office in the United
 States

14 248 F.3d 915.

15 507 U.S. 349 (1993).

AND defendant did not act as a commercial agent (acto
jure gestionis)
AND defendant did act as a sovereign (acto jure
imperii)

EXAMPLE *Amerada Hess*¹⁶ PROVIDES

defendant may not be liable

IF defendant was present in the United States
AND defendant was not a resident in the United States
AND defendant was not kidnapped
AND defendant state asserted its right to immunity
AND defendant was not a minister
AND defendant was representing a state friendly to the
United States
AND defendant did not transact business in the United
States
AND defendant did not maintain an office in the
United States
AND defendant did not act as a commercial agent (acto
jure gestionis)
AND defendant did act as a sovereign (acto jure
imperii)

Again, as can be seen, the PANNDA engine forces us to consider each element of the case as having a value even where the facts were such that in the actual case no such value existed or was relevant. Similarly the UNOCAL case had to be split into two parts since it held that UNOCAL could be liable but SLORC could not. Further one could easily disagree with the characterizations I assigned to *Doe v. Unocal* (SLORC): was SLORC only engaging in a sovereign act? Or was it only a commercial actor? Or was it both a commercial and sovereign actor? Is Myanmar a regime friendly to the United States? Is it a regime unfriendly to the United States? Should that status even be considered? That factor – whether a foreign state is legally “friendly” to the United States – seems to be an example of creeping legal realism. A realist would note that in the cases where a close U.S. ally is involved liability is not found, but in cases where the *locus delicti* happens to be a state either not friendly to or even unfriendly toward the United States that liability is more likely to be found. In other words, simply because we can make a model of the law does not mean our model is necessarily right. That problem is compounded where debugging is hindered by the CGI’s slow response

16 *Amerada Hess*, 488 U.S. 428.

time. Slow CGI response time does force the programmer to be disciplined however and so is not entirely a bad thing.

III. PRACTICAL APPLICATIONS OF WYSH PROGRAMS: THE USE OF AI AS A TOOL TO REDUCE LEGAL COMPLEXITY

Lawyers would principally find WYSH and similar artificial intelligence useful for diagnostic work and more particularly as a way to avoid missing easy but obscure arguments. A well written WYSH program will force the lawyer to ask questions which s/he might otherwise overlook and thus raise potential defenses or lines of attack which they might not remember to raise at trial. For example, the civil procedure WYSH program will force the lawyer to remember each step in the determination of federal jurisdiction. These kinds of checklists already exist on paper of course but they may be more interesting if the lawyer is forced to go through them systematically and prompted to consciously formulate explicit answers to what might seem quite inconsequential factual questions. WYSH can also generate documents automatically (such as wills or contracts) based on user input.¹⁷

IV. CONCLUSION AND FUTURE PROSPECTS

Computer applications in law have expanded from simple word processing to electronic research and trial aids (primarily animation). There have been relatively few applications of artificial intelligence to law. This is partly because AI is still a developing technology. Expert systems generally answer limited tasks reasonably well, but AI general systems have not yielded much success. AI, unlike other areas of programming, has not yet yielded profits. AI algorithms do increasingly figure in commercial programs. AI can be useful not only as a tool to teach legal reasoning to law students, but also as a source for automated document generation (principally contracts and wills) and “checklists” for legal practitioners.

17 See, e.g., http://www2.austlii.edu.au/~graham/wysh/wysh_will.html (last visited Mar. 7, 2004).